ioLogik E2210 User's Manual

First Edition, April 2006

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ioLogik E2210 User's Manual

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1

Overview

ioLogik E2210 Series is an EasyView stand-alone Remote I/O Server that can connect sensors, and on/off switches for automation applications over Ethernet, and IP-based networks.

The following topics are covered in this chapter:

- **Overview**
- **Package Checklist**
- **Product Specifications**
  - General Specifications
  - Specifications
- **Ping Assignment**
  - Terminal Blocks
  - Setting the RS-485 Communication Speed

Overview

ioLogik E2210 Ethernet I/O Server is designed to link sensors, transmitters, transducers, and valves to the Ethernet such that the IT system can directly access each I/O points transparently over the IP network.

ioLogik E2210 can expand I/O points via RS-485 by adding more ioLogik R2100 series RS-485 I/O Servers, such that each field I/O points can be accessed within a single IP environment.

Stand-alone Ethernet I/O

- Each ioLogik E2210 module occupies one IP address.
- The ioAdmin (*) can automatically search each ioLogik E2210 module. Alternatively, the user can manually enter the IP address in case it's installed over a remote network.
- Users can configure, and monitor the status on the graphic user interface of ioAdmin.
- Users can check Modbus register settings in ioAdmin.
- Up to 5 users can monitor the ioLogik E2210 using ioAdmin. The ioLogik E2210 can be password protected (default: no password).
- In Modbus/TCP mode, each ioLogik E2210 can communicate with standard SCADA software. For example, Wonderware InTouch, GE Intellution iFix32.
- Under Windows, user programs can access each I/O status over an IP network running the MXIO DLL library (coming soon).
- Built-in Modbus gateway.
- Web console.
- Hot-pluggable LCD display kit (optional).
- SNMP for system management, and I/O status.
- Remote firmware update.
- Built-in watchdog timer with safe status.
- Power on initial I/O status setting.
- Multi-functional I/O supporting DI/Event Counter, DO/Pulse Output

* NOTE: *The ioAdmin utility is designed by MOXA. It helps users configure and monitor ioLogik. For more detailed information, refer to chapter 4.*

Package Checklist

ioLogik E2210 is shipped with the following items:

Standard Accessories

- ioLogik E2210 Ethernet I/O Server × 1
- Software CD with documentation × 1

Optional Accessories

- LDP1602 ioLogik LCD display kit, 16 × 2 text and 5 push-buttons.

NOTE: *Notify your sales representative if any of the above items are missing, or damaged.*

Product Specifications

ioLogik E2210

12-ch isolated DI, and 8-ch isolated DO, Modbus/TCP

General Specifications

The following specifications are common to all ioLogik E2210 Ethernet I/O servers.

LAN

10/100BaseTx with MDI/MDIX, RJ45
Built-in 1.5 KV magnetic isolation

Serial

2-wire RS-485 for module cascading, terminal block (3.81 mm), supports data+, data-
Baudrate up to 115.2 kbps
Built-in ADDC™
15 KV ESD for all serial signals

Protocols

DHCP, Bootp, TCP, UDP, IP, ICMP, HTTP, SNMP V2
Modbus/TCP up to 10 sockets

Windows Utilities

ioAdmin for remote configuration, and monitoring

IP Address

Default IP: 192.168.127.254
User configurable to DHCP, Bootp, DHCP/Bootp, Static IP

Operating Modes for Host Control

Modbus/TCP
DLL for VB, BCB, VC++ with comprehensive examples (coming soon)

Built-in Watchdog Timer

Communication watchdog timer for safe status. The time is user configurable to a second.

Configuration

Use ioAdmin to automatically search, and locate the ioLogik module over Ethernet
Use Web browser for configuration
Remote firmware upgrade
Configurations can be saved as a file

Power Input

12 to 48 VDC, accept 24 VDC industrial power supply,
power consumption 282 mA @ 24 VDC

Reverse polarity protection

Environmental

Operating Temp: -10 to 60°C @ 95% RH

Ground Connection

DIN-Rail, and Panel Mount holes equipped ground connection

Terminal Block

Removable terminal block (3.81 mm) (DI/O)

Signal indication LEDs for each channel (DI/O)

Regulatory Approvals

Shock, Free fall, Vibration

CE Class A, Level 3, Criteria B

FCC Part 15, CISPR (EN55022) class A

UL 508 (pending)

Specifications

I/O Type

12 DI, 8 DO

Digital Input

Dry Contact	Logic 0: close to GND
	Logic 1: open
Wet Contact	Logic 0: 0 to 3 VDC
	Logic 1: 10 to 30 VDC

Low speed counter for limit switch with filtering (in 0.5 mS intervals)

Excess voltage protection (withstands voltage up to +36 VDC)

Source

Optical Isolation 3K VDC

Pulse wave form settings in 0.5 ms

Excess voltage protection (withstands voltage up to +36 VDC)

Digital Output

Sink, 24 VDC, 200 mA

Optical Isolation 3K VDC

Protection Over temperature shutdown: Min, 170°C
Over voltage protection: 36 VDC
Over current limit: typ. 750 mA

LCD display kit for ioLogik E2210 (optional)

Text 16 × 2 LCM with backlight

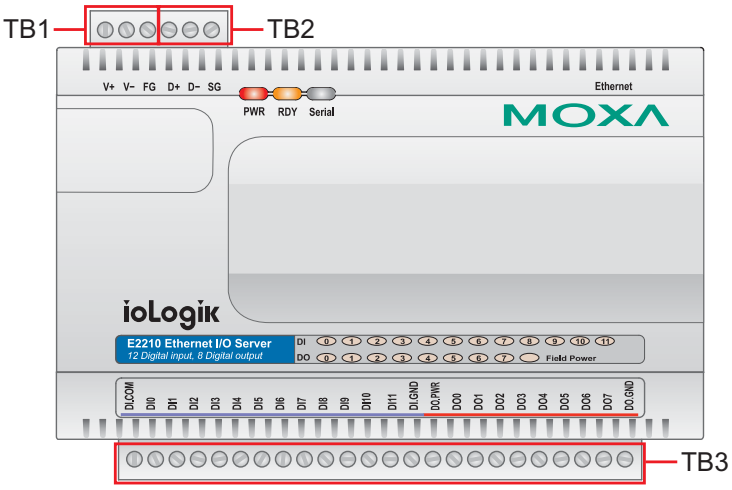
Button × 5 (up, down, right, left, center)

Hot pluggable to ioLogik I/O Server

IP display, DI/DO status, AI/AO reading display

Pin Assignment

Terminal Blocks



TB1	Signals
1	V+ (12 to 30 VDC)
2	V-
3	FG

TB2	Signals
1	Data+
2	Data-
3	SG

TB3	1	2	3	4	5	6	7	8
Signals	DI.COM	DI 0	DI 1	DI 2	DI 3	DI 4	DI 5	DI 6

TB3	9	10	11	12	13	14	15	16
Signals	DI 7	DI 8	DI 9	DI 10	DI 11	DI.GND	DO.PWR	DO 0

TB3	17	18	19	20	21	22	23	24
Signals	DO 1	DO 2	DO 3	DO 4	DO 5	DO 6	DO 7	DO.GND

Setting the RS-485 Communication Speed

The RS-485 port on ioLogik E2210 is used to chain another RS-485 I/O Server. The RS-485 port can run the Modbus/RTU, or the I/O Command sets.

The baudrate can be set by hardware only. The default settings are Baudrate: 115200, Parity check: N, Data Bit: 8, Stop Bit: 1.

Setting the Baudrate via Rotary Switch

Baudrate for RS-485 * Parameter is N, 8, 1	The definition of rotary switch (Baudrate) 0:115200 1:57600 2:38400 3:19200 4:9600 5:4800 6:2400 7:1200

* E, 7, 1 is not supported because Modbus/RTU supports only N, 8, 1.
* For RS-485 cascading interface, the RS-485 Unit ID = 1.

2

Hardware Installation

This chapter includes information about Hardware installation for ioLogik E2210 Easy View Remote I/O server.

The following topics are covered in this chapter:

- **Connecting the Hardware**
  - Connecting the Power
  - Grounding ioLogik E2210 Series
  - Connecting to the Network
  - Connecting to the I/O Device
  - LED Indicators

Connecting the Hardware

Connecting the Power

Connect the 12 to 30 VDC power line with ioLogik E2210's terminal block. If the power is properly supplied, the ***Power*** LED will glow a solid red color until the system is ready

Grounding ioLogik E2210 Series

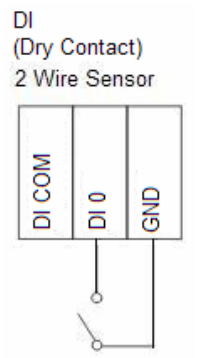
The ioLogik Ethernet I/O Server is equipped with two protection ground points. One is on the wall mount hole. The other is on the DIN-Rail mounting rail.

Connecting to the Network

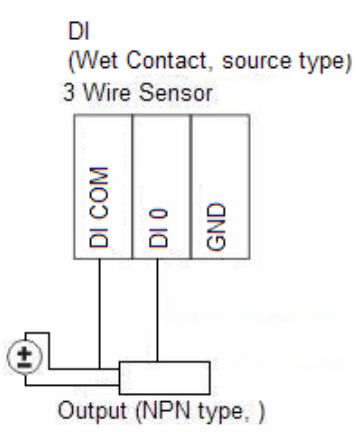
Connect the Ethernet I/O Server to the Ethernet switch of the hub that connects to your host computer. Alternatively, you can use a straight Ethernet cable to connect the Ethernet I/O server, and the host computer directly.

Connecting to the I/O Device

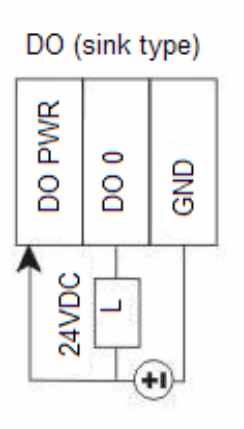
1. DI dry contact



2. DI wet contact (source type)



3. DO sink type



* DO PWR is for powering up the ***field Power*** LED.

LED Indicators

LED	Description	
Ethernet		
Ethernet	---	
System LEDs		
PWR	Red	Power is on
Ready	Red	System error.
	Green	ioLogik is functioning normally.
	Off	Power is off, or power error condition exists.
Serial	Blinking	Serial port is receiving data and transmitting data.
DI/DO LEDs		
DI ×12 pins **DO × 8 pins** **Field PWR**	In 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 Out 0, 1, 2, 3, 4, 5, 6, 7 Field power	

3

Network Configuration

In this chapter, we show you how to configure the network settings of ioLogik E2210.

The following topics are covered in this chapter:

- **Initializing ioLogik E2210's IP Address**
- **Factory Default Settings**
- **ioAdmin Utility**
- **Web Console**
- **LCD Display Kit**

Initializing ioLogik E2210's IP Address

1. Determine whether your ioLogik E2210 needs to use a Static IP, or Dynamic IP (either DHCP, or BOOTP application).
2. ***In a Static IP environment***, you can use ioAdmin, or Web Console to configure the new IP address.
3. ***In a Dynamic IP environment***, you can use ioAdmin, or Web Console to configure ioLogik E2210 to get an IP address dynamically with DHCP, DHCP/BOOTP, or BOOTP.

Factory Default Settings

ioLogik E2210 is configured with the following default settings:

Default IP address: 192.168.127.254
Default Netmask: 255.255.255.0
Default Gateway: None

ioAdmin Utility

ioAdmin Utility is a Windows utility used to configure, export settings, and monitor the ioLogik Ethernet I/O Server remotely over the internet.

Web Console

Use the web browser, in case you do not have the ioAdmin utility installed on the host computer. By entering the IP address of the Ethernet I/O server, you can configure it directly. For more information, refer to Chapter 5.

LCD Display Kit

An optional LCD display kit is available that can be attached to the ioLogik I/O Server for easier field maintenance. The main function of the LCD display kit is as follows: All information on the LCD display is not only for display but also for configuration. The default page of the LCD display kit is the home page of this ioLogik E2210. When you press any key, you will enter the system.

LCD Display Kit Information

** The LCD Display Kit is hot-pluggable to E2210

Common operations of the LCD Display Kit:

Up: go to the previous item
Down: go to the next item
Left: go to the previous menu level
Center: enter/exit the editing mode

Display	Explanation / Actions
<ioLogik E2210> server	Default page, press the any key to enter the next level. The following information is displayed: • **serial number** • **name** • **location** • **e2210 f/w ver** • **lcm f/w ver** • **model name**
<ioLogik E2210> Network	The following information is displayed: • **ethernet link** • **mac Address** • **ip mode: Static, DHCP, DHCP/Bootp, Bootp** • **ip Address: 192.168.127.254** • **netmask: 255.255.255.0** • **Gateway: 0.0.0.0** • **dns Server-1: 0.0.0.0** • **dns Server-2: 0.0.0.0**
<ioLogik E2210> serial port	RS-485 cascade port settings. The following information is displayed: RS-485 Setting: 115200, n, 8, 1
<ioLogik E2210> i/o SETTING	I/O status to be displayed. For example, setting DI-00 as DI, and DI-07 as counter. (only for display) • **DI-00 = ON, or OFF** • **DI-07 [CT] = 0** When setting DO-03 as DO, DO-01 as Pulse Output. • **DO-01 = [Pulse] = 1 Hz** • **DO-03 = ON, or OFF** Press ***up***, or ***down*** to change the I/O display channel directly without going back to the previous level.
<ioLogik E2210> console	Enable, or disable Web console.
<ioLogik E2210> ping	• **ip address** • **ping ip**
<ioLogik E2210> Save/restart	• **restart now** • **restart**

4

Configuring E2210 Using ioAdmin

This chapter covers the following topics explains how to configure the I/O channels.

- **Overview**
- **Installing ioAdmin Utility**
- **Search the Ethernet I/O Server**
- **Monitoring I/O Status**
- **On-line Wiring Guide**
- **Modbus/TCP**
- **Configuring Digital Input Channels**
- **Configuring Digital Output Channels**
- **Power On Initial Status**
- **Safe Status and Communication Watchdog Timers**
- **Restart System**
- **Reset to Default**
- **Export Settings**
- **I/O Status**
- **Server Information**
- **Active I/O Messaging**
- **Test I/O**
- **Security**
- **Password Protection**
- **Network Settings**
- **Modbus/TCP Alive Check Timeout**
- **SNMP (Simple Network Management Protocol)**
- **Firmware Update**
- **Watchdog Timer**

Overview

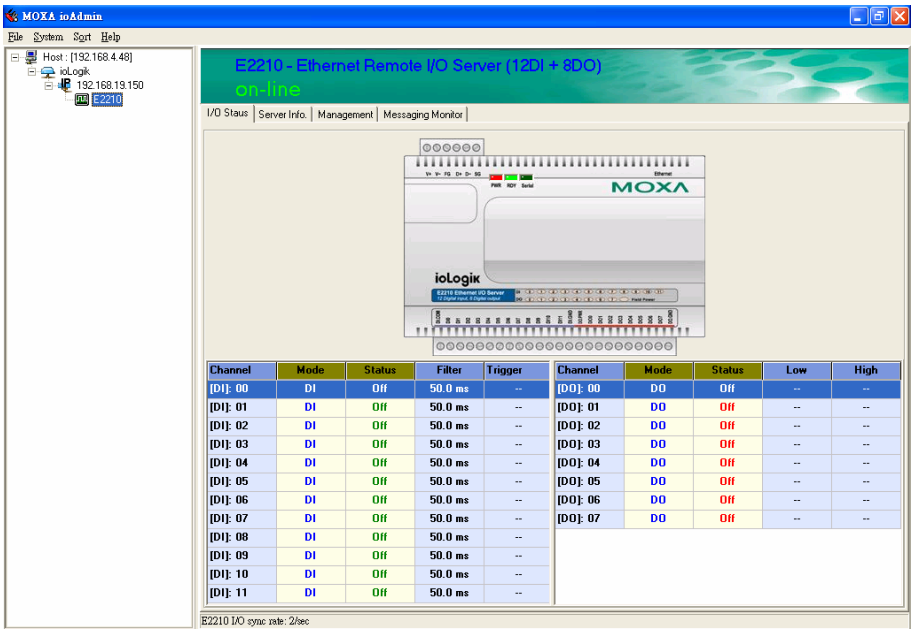
ioAdmin utility supports Windows 2000, and Windows XP. It consists of the following software.

- ioAdmin utility
- ioLogik E2210 Wiring Guide
- MXIO DLL library (coming soon)

Installing ioAdmin Utility

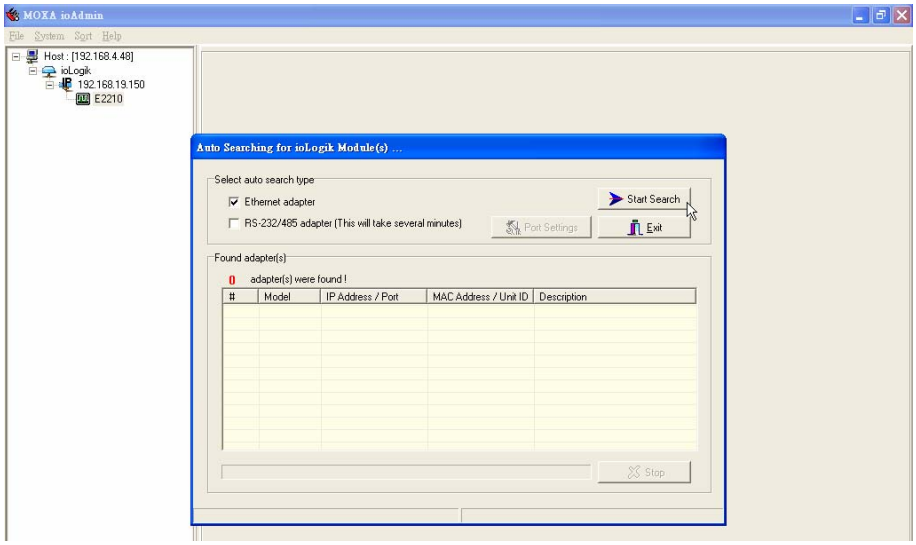
Insert the CD-ROM from the Network Adapter's package into the host computer. Run **SETUP.EXE**, which is located in the root directory on the CD-ROM. The installation program will guide you through the installation process, and install the ioAdmin utility along with the MXIO DLL library.

After installation is finished, run ioAdmin from **Start → Program Files → ioLogik → Utility → ioAdmin**.


MOXA ioAdmin
File System Sort Help
Host : [192.168.4.48]
ioLogik
192.168.19.150
E2210
E2210 - Ethernet Remote I/O Server (12DI + 8DO)
on-line
I/O Staus
Server Info.
Management
Messaging Monitor
MOXA
ioLogik
Channel Mode Status Filter Trigger
[DI]: 00 DI Off 50.0 ms --
[DI]: 01 DI Off 50.0 ms --
[DI]: 02 DI Off 50.0 ms --
[DI]: 03 DI Off 50.0 ms --
[DI]: 04 DI Off 50.0 ms --
[DI]: 05 DI Off 50.0 ms --
[DI]: 06 DI Off 50.0 ms --
[DI]: 07 DI Off 50.0 ms --
[DI]: 08 DI Off 50.0 ms --
[DI]: 09 DI Off 50.0 ms --
[DI]: 10 DI Off 50.0 ms --
[DI]: 11 DI Off 50.0 ms --
Channel Mode Status Low High
[DO]: 00 DO Off -- --
[DO]: 01 DO Off -- --
[DO]: 02 DO Off -- --
[DO]: 03 DO Off -- --
[DO]: 04 DO Off -- --
[DO]: 05 DO Off -- --
[DO]: 06 DO Off -- --
[DO]: 07 DO Off -- --
E2210 I/O sync rate: 2/sec

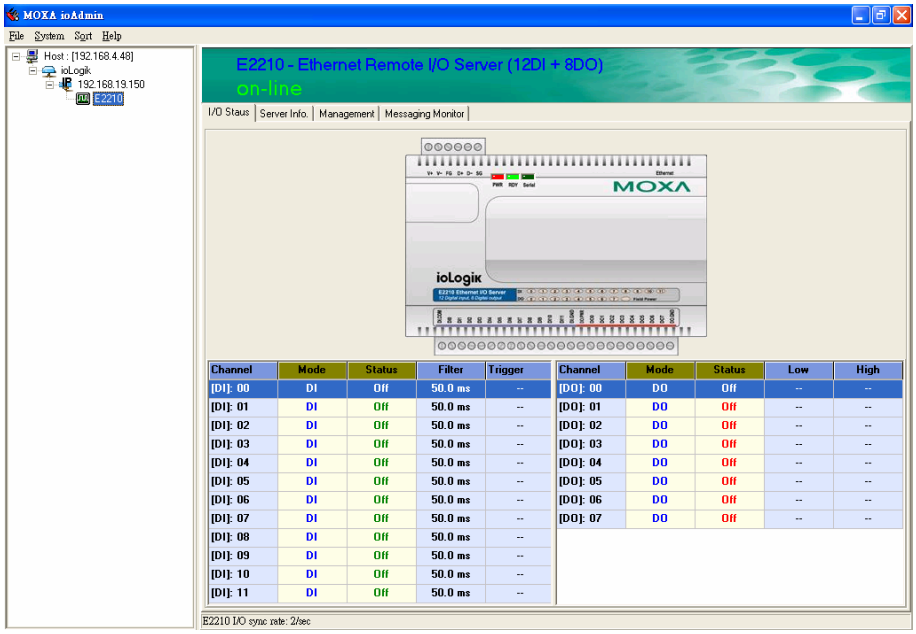
Search the Ethernet I/O Server

From the pull-down menu, choose **system → Auto Scan Remote I/O Server.** The system pops-up a dialog window wherein you click ***Start Search*** to find the ioLogik E2210. If you want to configure ioLogik E2210, make sure that your computer and iologik E2210 are in the same subnet.



Monitoring I/O Status

Once the I/O Server is found by ioAdmin, you can view I/O status from the 1st tab of the ioAdmin utility.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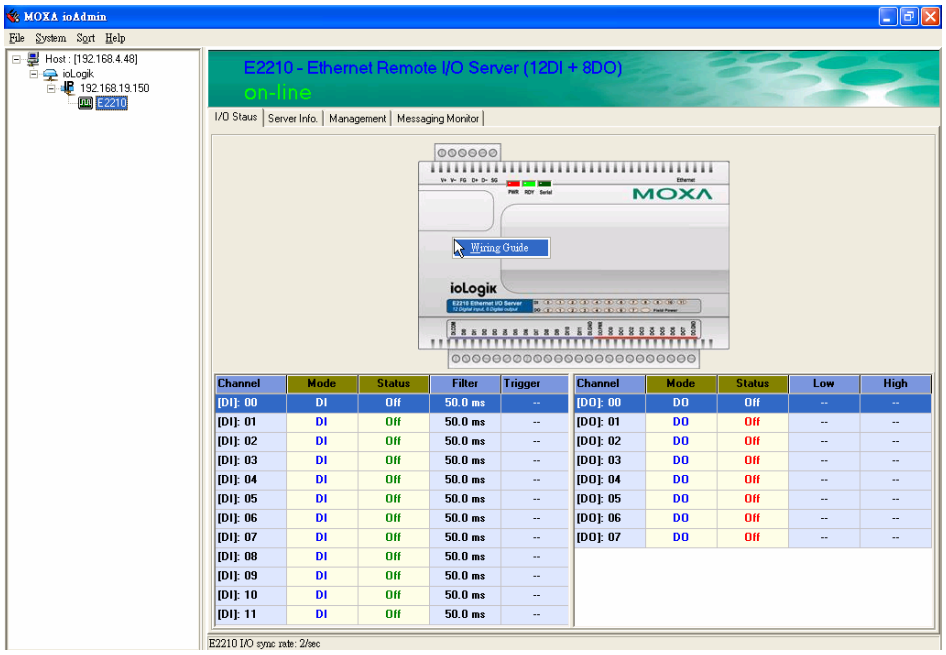
[DI]: 00 DI Off 50.0 ms --
[DI]: 01 DI Off 50.0 ms --
[DI]: 02 DI Off 50.0 ms --
[DI]: 03 DI Off 50.0 ms --
[DI]: 04 DI Off 50.0 ms --
[DI]: 05 DI Off 50.0 ms --
[DI]: 06 DI Off 50.0 ms --
[DI]: 07 DI Off 50.0 ms --
[DI]: 08 DI Off 50.0 ms --
[DI]: 09 DI Off 50.0 ms --
[DI]: 10 DI Off 50.0 ms --
[DI]: 11 DI Off 50.0 ms --
Channel Mode Status Low High
[DO]: 00 DO Off -- --
[DO]: 01 DO Off -- --
[DO]: 02 DO Off -- --
[DO]: 03 DO Off -- --
[DO]: 04 DO Off -- --
[DO]: 05 DO Off -- --
[DO]: 06 DO Off -- --
[DO]: 07 DO Off -- --
E2210 I/O sync rate: 2/sec

On-line Wiring Guide

Right click on the E2210 icon, and then left click on ***Wiring Guide***. This displays a HELP file with the wiring information, and electric characteristics of E2210.


MOXA ioAdmin
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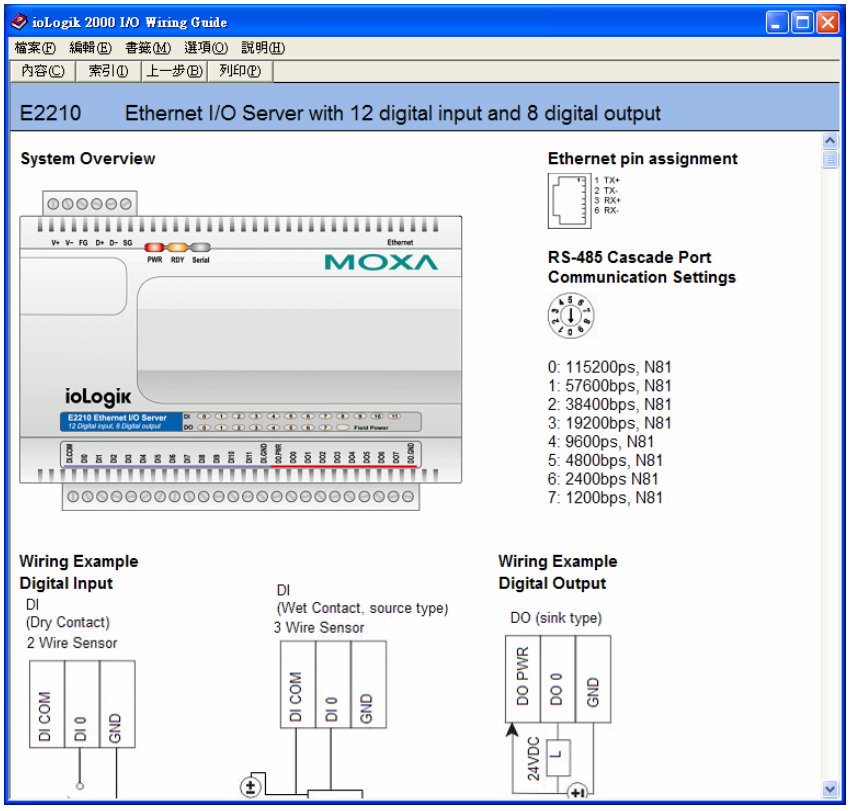
Channel Mode Status Filter Trigger
[DI]: 00 DI Off 50.0 ms --
[DI]: 01 DI Off 50.0 ms --
[DI]: 02 DI Off 50.0 ms --
[DI]: 03 DI Off 50.0 ms --
[DI]: 04 DI Off 50.0 ms --
[DI]: 05 DI Off 50.0 ms --
[DI]: 06 DI Off 50.0 ms --
[DI]: 07 DI Off 50.0 ms --
[DI]: 08 DI Off 50.0 ms --
[DI]: 09 DI Off 50.0 ms --
[DI]: 10 DI Off 50.0 ms --
[DI]: 11 DI Off 50.0 ms --
Channel Mode Status Low High
[DO]: 00 DO Off -- --
[DO]: 01 DO Off -- --
[DO]: 02 DO Off -- --
[DO]: 03 DO Off -- --
[DO]: 04 DO Off -- --
[DO]: 05 DO Off -- --
[DO]: 06 DO Off -- --
[DO]: 07 DO Off -- --
E2210 I/O sync rate: 2/sec



Modbus/TCP

The Ethernet port on the E2210 runs Modbus/TCP slave. Using Modbus/TCP master on the PC gets the status, and settings of all I/O channels. Note that the RS-485 port runs Modbus/RTU Master so that the chained RS-485 I/O can be accessible from the IP Address.

Configuring Digital Input Channels

E2210 is equipped with 12 Digital Inputs that can be set individually to ***DI***, or ***Event Counter Mode***. In DI mode, the specification is as follows:

Dry contact

Logic 0 (OFF): short to GND

Logic 1 (ON): open

Wet contact

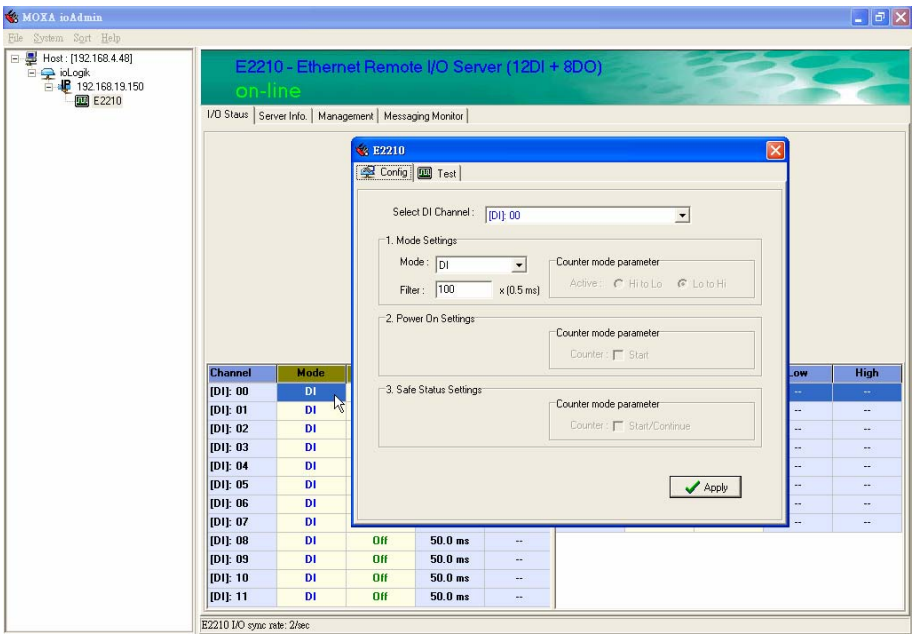
Logic 0 (OFF): 0 to 3V

Logic 1 (ON): 10 to 30V

In Event Counter mode, E2210's DI can connect to the limit switch, or the proximity switch, and count the time based on the ON/OFF status. You can set the trigger as two modes, ***Lo to Hi***, or ***Hi to Lo***. When setting the trigger as ***Lo to Hi***, the counter value increases when the switch is pushed. When setting the trigger as ***Hi to Lo***, the counter value increases when the switch is pushed, and released.

To eliminate the Bouncing problem of the switch, E2210 provides software filtering. It is configurable in steps of 0.5 ms units. The maximum value of the software filter is 65535.

Setting the filter value as 0 causes the system to filter all signals.



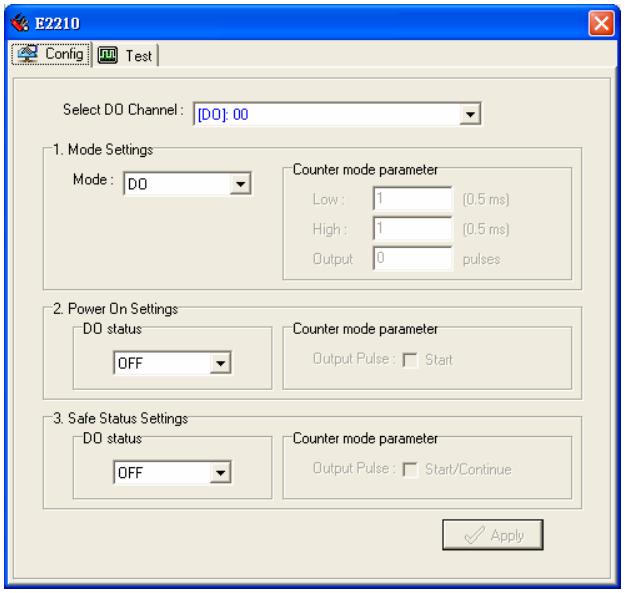
Configuring Digital Output Channels

E2210 is equipped with 8 Digital Output (sink) channels that can be set individually to ***DO***, or ***Pulse Output*** mode.

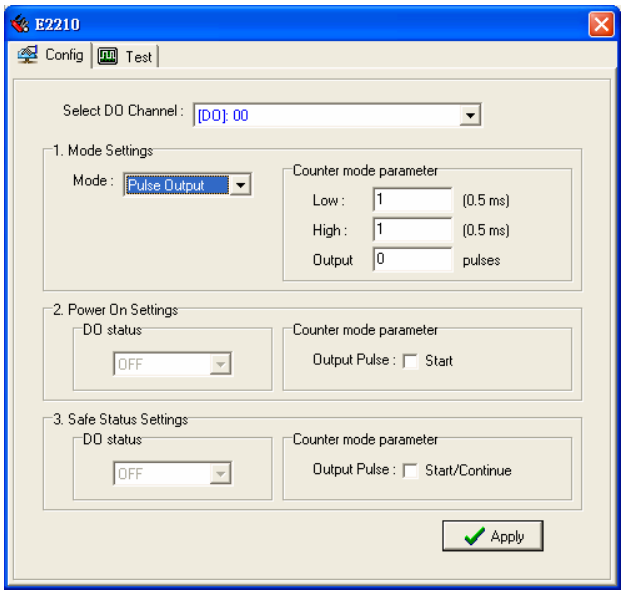
In DO mode, the specification is as follows:

Logic 0 (OFF): open

Logic 1 (ON): short



In Pulse Output mode, [setting the value of low width to 1000, and the value of high width to 1000 (1000 * 0.5 ms + 1000 * 0.5 ms = 1000 ms), activates the pulse output], the Digital Output channel will generate a square wave with 1 second cycle in total. (50% low, 50% high). Output defines the number of pulses that are sent. The default value of 0 indicates that the system will send an unlimited number of pulses. The maximum value of Low and High parameter is 65535. In addition, the maximum value of output is 2^{32}.



Power On Initial Status

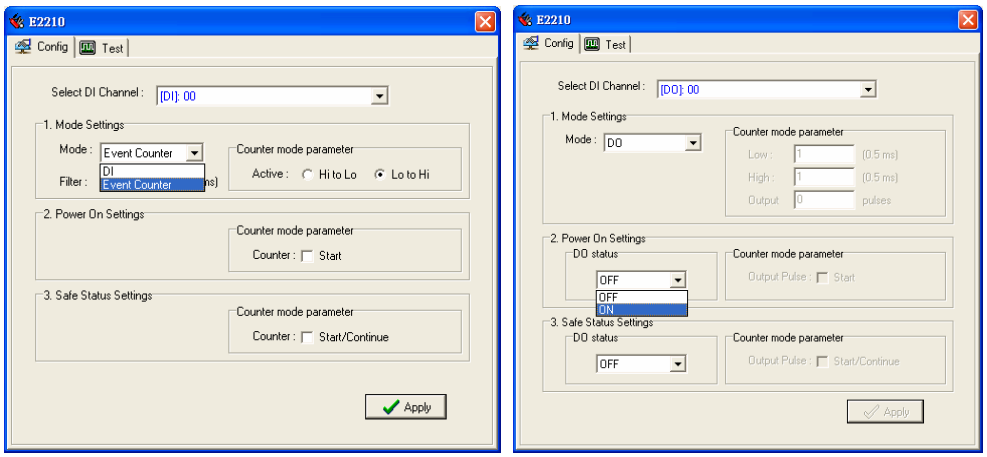
The E2210 features user configurable power on initial status for DI/DO. The settings are as follows:

DI-DI: depends on input device.

DI-Event Counter: set to ***Start***, or ***Stop*** counting.

DO-DO: set to ON, or OFF.

DO-Pulse: set to ***Start***, or ***Stop*** generating pulse.



Safe Status and Communication Watchdog Timers

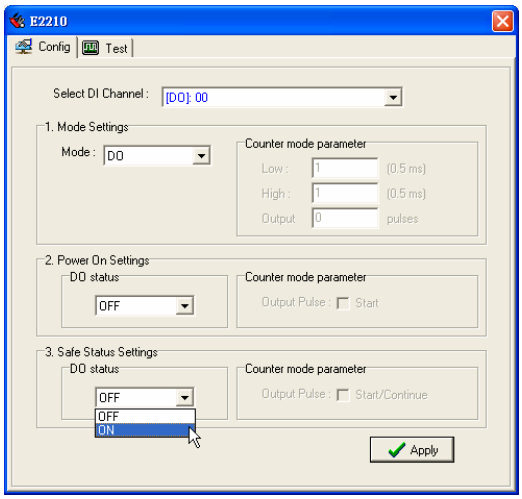
A communication watchdog timer can be activated (default: NOT ACTIVE) to monitor the communication between the PC, and I/O Server for a specified period of time. When a timeout occurs, the I/O Server will automatically set the DI-Counter mode, DO, or DO-Pulse mode to a pre-defined safe status as specified below: (Note：For more information about the Watchdog Timer, refer to chapter 4)

DI-DI: no change.

DI-Event Counter: set to ***Start/Continue*** counting.

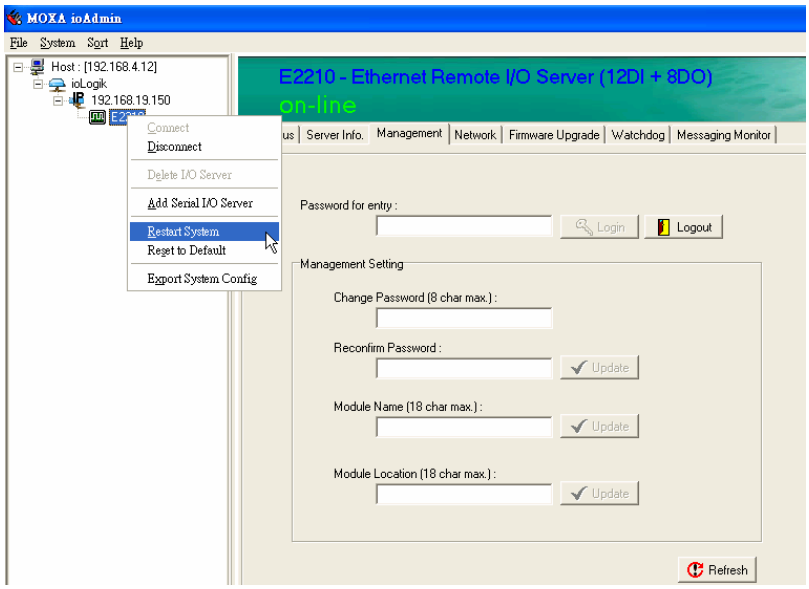
DO-DO: set to ON, or OFF.

DO-Pulse: set to ***Start/Continue*** generating pulse.



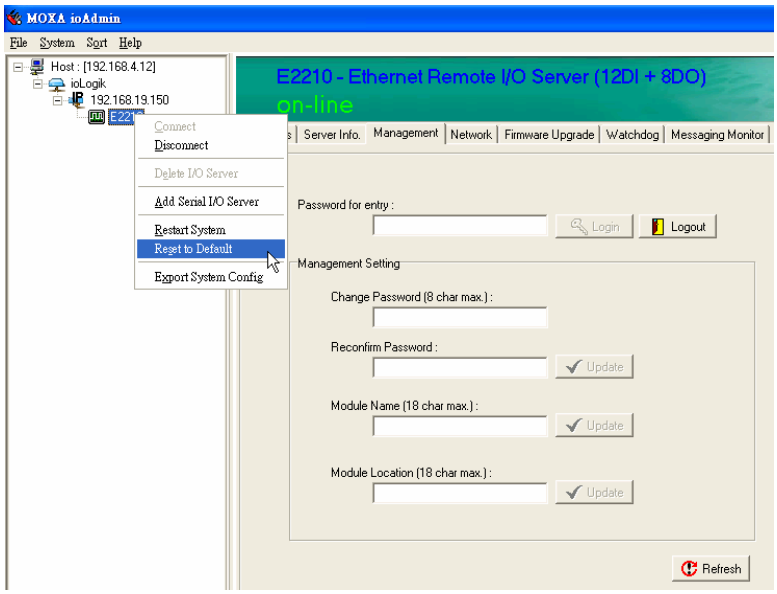
Restart System

You can use the restart function to restart your ioLogik E2210 from a remote site. However, you must input the password, and only then will the restart function be enabled.



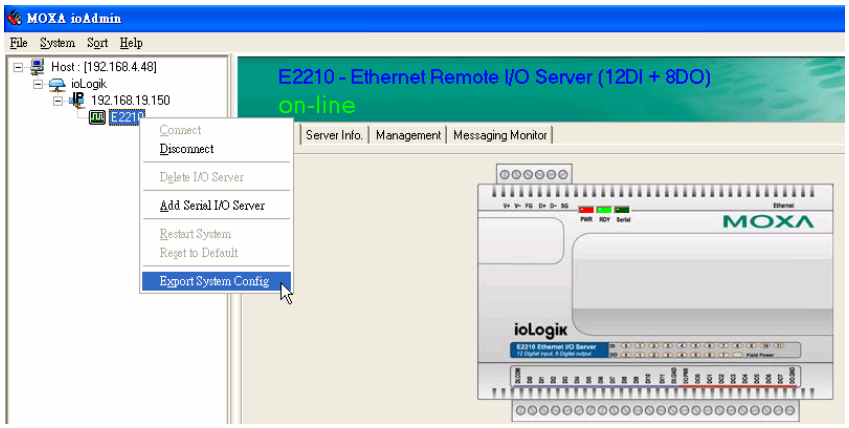
Reset to Default

You can use the ioAdmin utility to reset the system to factory defaults. However, you must input the password, and only then will the reset to defaults function be enabled.



Export Settings

E2210 settings can be exported to a text file for backup.

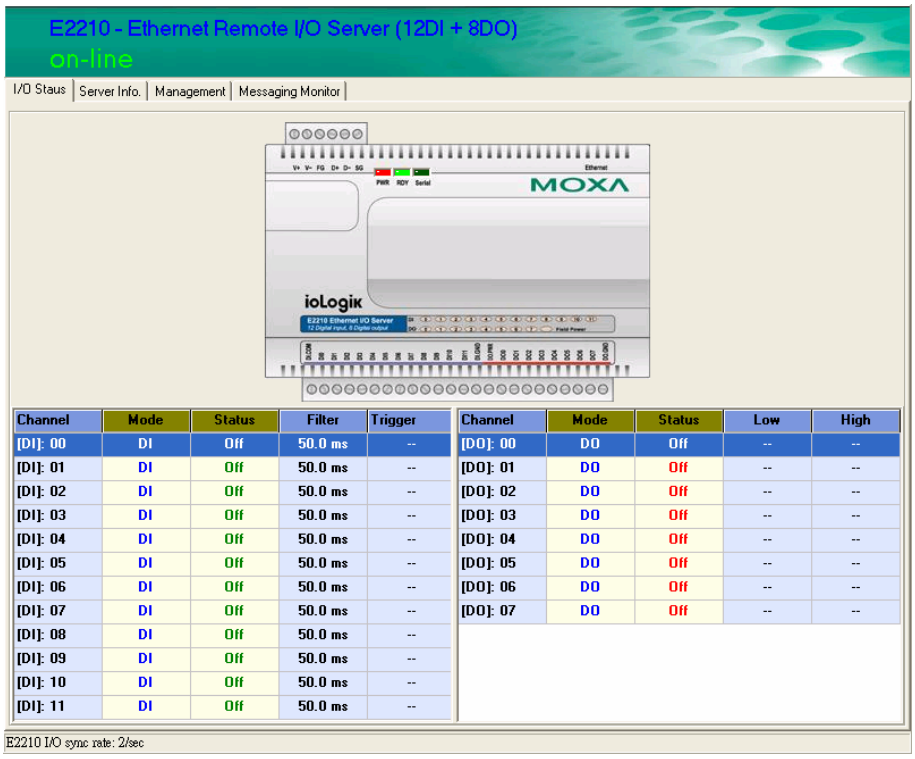



```
ioLogik 2000 Network I/O Server Configuration
=============================================
Date: 2006/1/19
Time: 下午 05:24:02

1. Model
--------
E2210 Ethernet I/O Server 12DI, 8DO(sink)

2. System and I/O Configurations
--------------------------------
System    IP=192.168.15.36, NM=255.255.0.0, GW=192.168.15.254,
MAC=00-00-00-00-00-09
     Communication Watchdog=Disable, Timeout: 0 sec

DI00 Counter   PWR ON=Start, Safe Status=Start, Filter=5.00ms, Trigger=Lo to Hi
DI01 Counter   PWR ON=Start, Safe Status=Start, Filter=5.00ms, Trigger=Lo to Hi
DI02 Counter   PWR ON=Start, Safe Status=Start, Filter=5.00ms, Trigger=Hi to Lo
DI03 Counter   PWR ON=Start, Safe Status=Start, Filter=5.00ms, Trigger=Lo to Hi
DI04 DI   -n/a-
DI05 DI   -n/a-
DI06 DI   -n/a-
DI07 DI   -n/a-
DI08 DI   -n/a-
DI09 DI   -n/a-
DI10 DI   -n/a-
DI11 DI   -n/a-
DI00 Pulse Output   PWR ON=Start, Safe Status=Start, Low=1ms, High=1ms
DI01 Pulse Output   PWR ON=Start, Safe Status=Start, Low=1ms, High=1ms
DI02 Pulse Output   PWR ON=Start, Safe Status=Start, Low=1ms, High=1ms
DI03 Pulse Output   PWR ON=Start, Safe Status=Start, Low=1ms, High=1ms
DI04 Pulse Output   PWR ON=Start, Safe Status=Start, Low=1ms, High=1ms
DI05 Pulse Output   PWR ON=Start, Safe Status=Start, Low=1ms, High=1ms
DI06 Pulse Output   PWR ON=Start, Safe Status=Start, Low=1ms, High=1ms
DI07 Pulse Output   PWR ON=Start, Safe Status=Start, Low=1ms, High=1ms
```

```
3. Modbus address table
-----------------------
Channel No.     I/O type  Modbus reference    Modbus address (Dec, Hex)
DI00            Input10001          0000, 0x0000
DI01            Input10002          0001, 0x0001
DI02            Input10003          0002, 0x0002
DI03            Input10004          0003, 0x0003
DI04            Input10005          0004, 0x0004
DI05            Input10006          0005, 0x0005
DI06            Input10007          0006, 0x0006
DI07            Input10008          0007, 0x0007
DI08            Input10009          0008, 0x0008
DI09            Input10010          0009, 0x0009
DI10            Input10011          0010, 0x000A
DI11            Input10012          0011, 0x000B
DO00            Output    40001          0000, 0x0000
DO01            Output    40003          0002, 0x0002
DO02            Output    40005          0004, 0x0004
DO03            Output    40007          0006, 0x0006
DO04            Output    40009          0008, 0x0008
DO05            Output    40011          0010, 0x000A
DO06            Output    40013          0012, 0x000C
DO07            Output    40015          0014, 0x000E

<END>
```

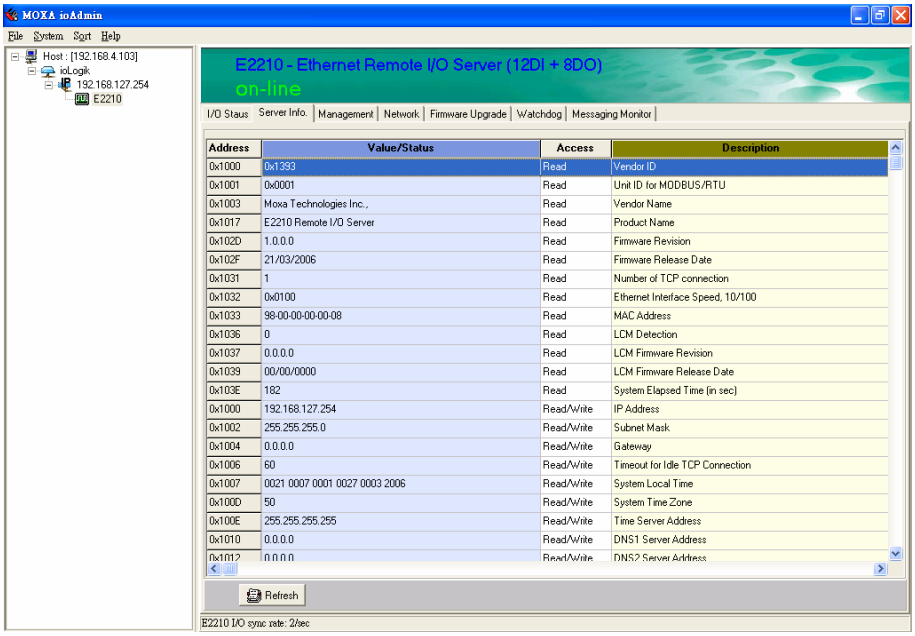
I/O Status

With I/O status, you can see the overall status of your E2210 I/O Server.



Server Information

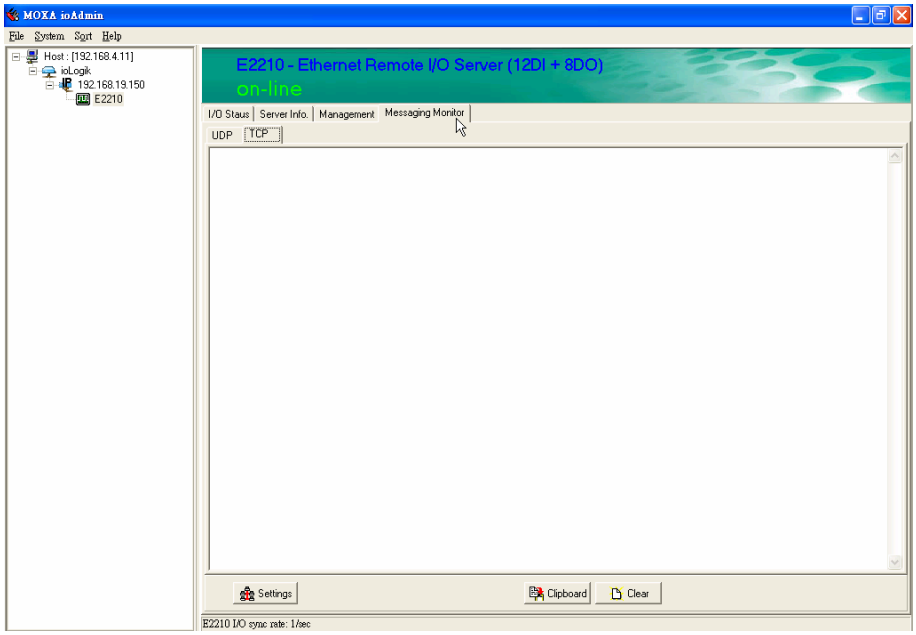
Server Information provides the modbus addresses for all system configurations. This helps you to verify the access authority of each address. The screen also displays a clear explanation of each item.



Address	Value/Status	Access	Description
0x1000	0x1393	Read	Vendor ID
0x1001	0x0001	Read	Unit ID for MODBUS/RTU
0x1003	Moxa Technologies Inc.,	Read	Vendor Name
0x1017	E2210 Remote I/O Server	Read	Product Name
0x102D	1.0.0.0	Read	Firmware Revision
0x102F	21/03/2006	Read	Firmware Release Date
0x1031	1	Read	Number of TCP connection
0x1032	0x0100	Read	Ethernet Interface Speed, 10/100
0x1033	98-00-00-00-00-08	Read	MAC Address
0x1036	0	Read	LCM Detection
0x1037	0.0.0.0	Read	LCM Firmware Revision
0x1039	00/00/0000	Read	LCM Firmware Release Date
0x103E	182	Read	System Elapsed Time (in sec)
0x1000	192.168.127.254	Read/Write	IP Address
0x1002	255.255.255.0	Read/Write	Subnet Mask
0x1004	0.0.0.0	Read/Write	Gateway
0x1006	60	Read/Write	Timeout for Idle TCP Connection
0x1007	0021 0007 0001 0027 0003 2006	Read/Write	System Local Time
0x100D	50	Read/Write	System Time Zone
0x100E	255.255.255.255	Read/Write	Time Server Address
0x1010	0.0.0.0	Read/Write	DNS1 Server Address
0x1012	0.0.0.0	Read/Write	DNS2 Server Address

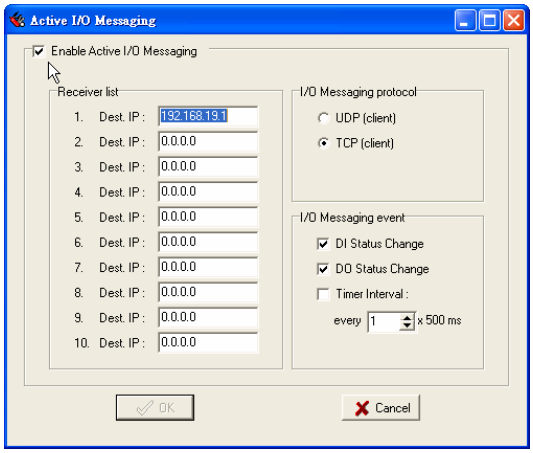
Active I/O Messaging

Traditional Modbus architecture requires a host computer to poll the status of each remote I/O server constantly, resulting in much consumption of CPU time, and network bandwidth. To improve efficiency, MOXA provides Active I/O Messaging. Using this, the I/O server can send a message whenever the DI, DO statuses change. You can select either TCP, or UDP as the protocol to send the I/O Messages. Up to ten host computers can receive the message at the same time.



When you press the ***Setting*** button, the following settings window is shown. You can define the 10 destinations (host computers) that should receive the data. Additionally, you can define the message type as TCP, or UDP. Next, under Messaging event, select when to send the message to the destination; the three options are: DI status change, DO status change, the other is a user defined interval. You can define the three functions at the same time - I/O messaging will be triggered by each of them. When you enable the time interval alone, the system will send only the status of DI.

NOTE: *When you click the clipboard button, the system will copy the all data to system memory. You can paste the data to other editors.*



Test I/O

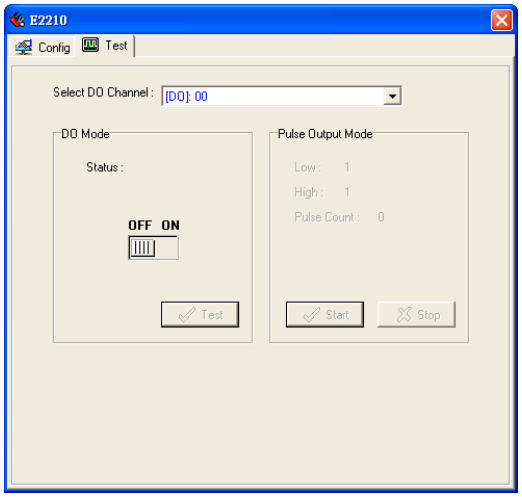
You can test the DI/O channel by using ioAdmin. The settings are as follows:

DI-DI: Depends on the devices.

DI-Counter: You can activate, or stop the counting.

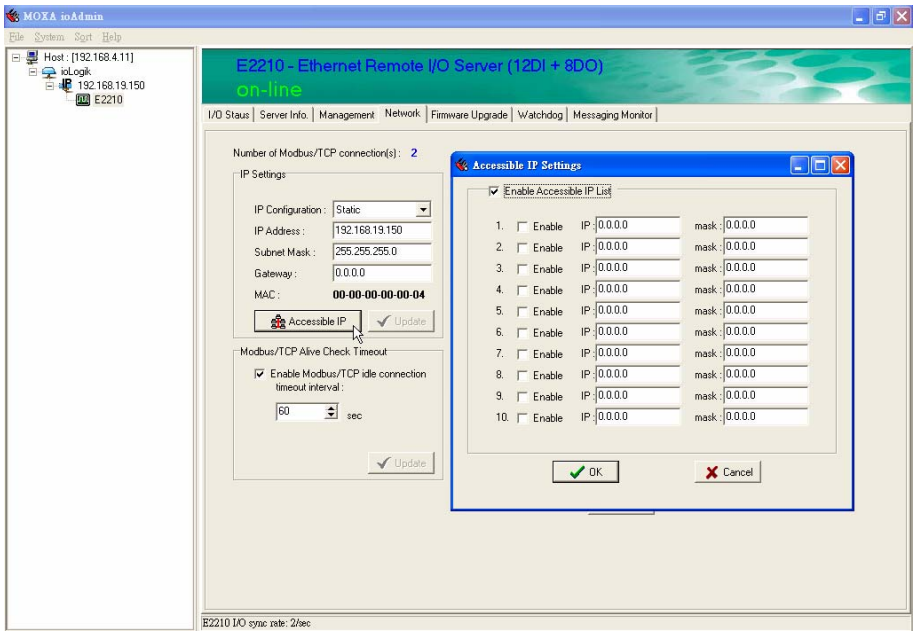
DO-DO: You can change status of the DO to ON, or OFF.

DO-Pulse: You can activate, or stop the pulse generation.



Security

The system settings are password protected. In addition, you can set a list of accessible IPs to protect the system from unauthorized access.

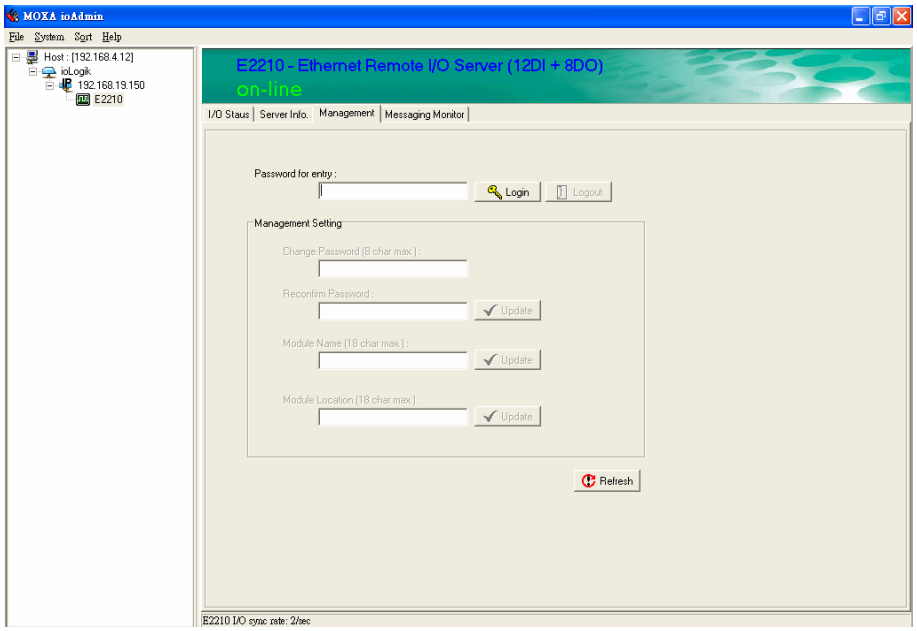

MOXA ioAdmin
File System Sort Help
Host : [192.168.4.11]
ioLogik
192.168.19.150
E2210
E2210 - Ethernet Remote I/O Server (12DI + 8DO)
on-line
I/O Staus | Server Info. | Management | Network | Firmware Upgrade | Watchdog | Messaging Monitor
Number of Modbus/TCP connection(s) : 2
IP Settings
IP Configuration : Static
IP Address : 192.168.19.150
Subnet Mask : 255.255.255.0
Gateway : 0.0.0.0
MAC : 00-00-00-00-00-04
Accessible IP
Update
Modbus/TCP Alive Check Timeout
Enable Modbus/TCP idle connection timeout interval :
60 sec
Update
Accessible IP Settings
Enable Accessible IP List
1. Enable IP : 0.0.0.0 mask : 0.0.0.0
2. Enable IP : 0.0.0.0 mask : 0.0.0.0
3. Enable IP : 0.0.0.0 mask : 0.0.0.0
4. Enable IP : 0.0.0.0 mask : 0.0.0.0
5. Enable IP : 0.0.0.0 mask : 0.0.0.0
6. Enable IP : 0.0.0.0 mask : 0.0.0.0
7. Enable IP : 0.0.0.0 mask : 0.0.0.0
8. Enable IP : 0.0.0.0 mask : 0.0.0.0
9. Enable IP : 0.0.0.0 mask : 0.0.0.0
10. Enable IP : 0.0.0.0 mask : 0.0.0.0
OK
Cancel
E2210 I/O sync rate: 2/sec

Password Protection

The Network, Communication Watchdog Timer, and firmware update functions are password protected in ioAdmin. If you forget the password, press ***Reset*** to clear the password, and change other settings back to their factory defaults.

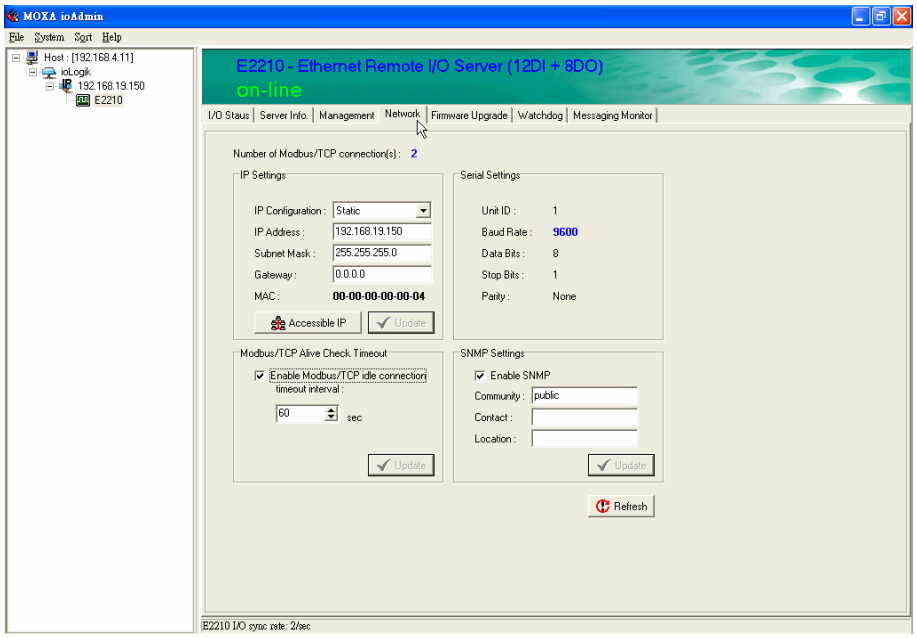
NOTE: *The Reset button is located at the top of the device*

* Press Reset, and hold for 5 seconds - the system reboots back to factory defaults.



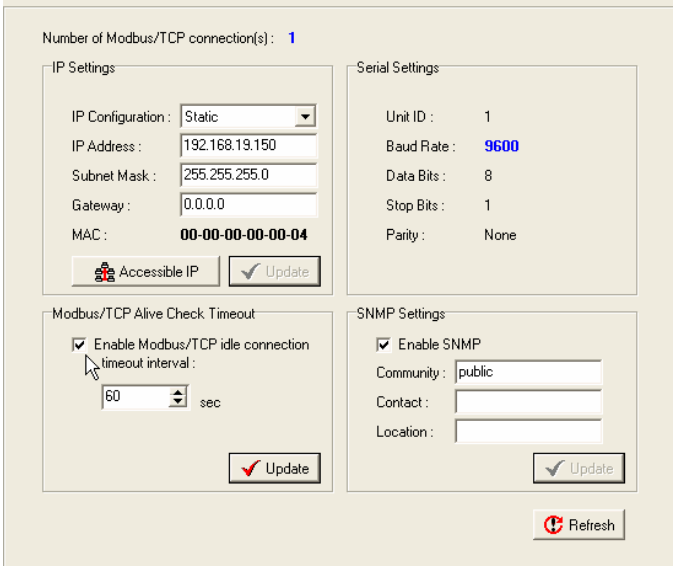
Network Settings

Before modifying the network settings, you must input the password. Now you can access the Network Settings screen. Set your ***IP Configuration*** (Static、DHCP、DHCP/BootP、BootP), ***IP address, Subnet Mask, and Gateway*** as appropriate. If ioLogik E2210 did not get an IP address when it is in DHCP mode, the IP address will be defined as the default IP-"192.168.127.254."



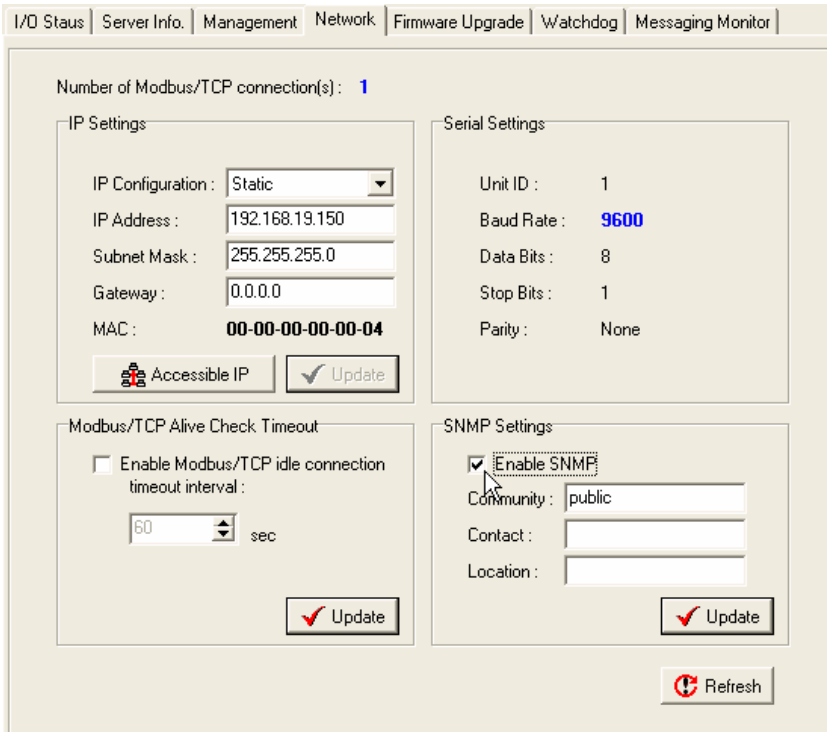
Modbus/TCP Alive Check Timeout

The Modbus/TCP Alive Check Timeout is designed to avoid TCP connection failure. When a host is down, the ioLogik E2210 will always wait for the response from the host causing the TCP port to be occupied by this host forever. Modbus/TCP Alive Check Timeout is designed to avoid this problem. The ioLogik E2210 closes the TCP connection automatically if there is no TCP activity for the specified time.



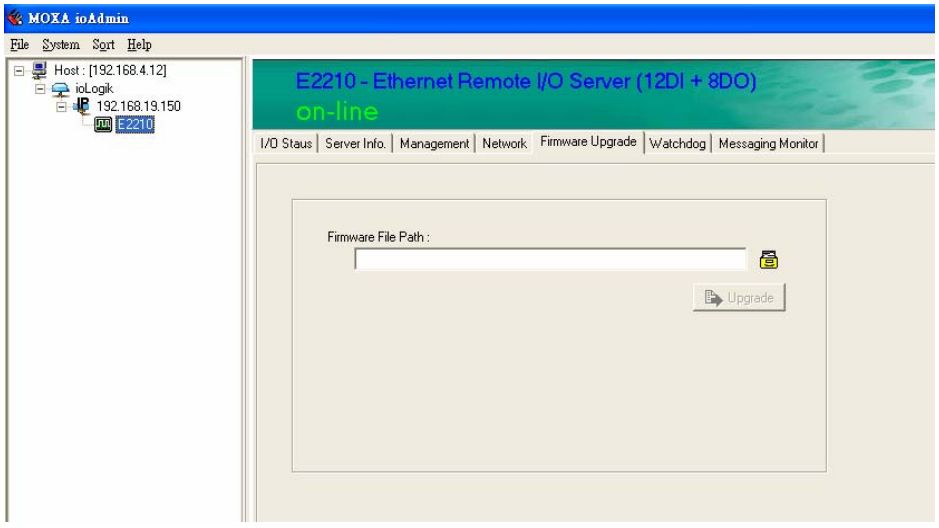
SNMP (Simple Network Management Protocol)

ioLogik™ E2000 series Ethernet I/O provides SNMP to I/O mapping that you can use to monitor DI, DO, and system status via SNMP Network Management software. It is useful in building automation, and telecom applications. Please refer to Appendix C for more details.



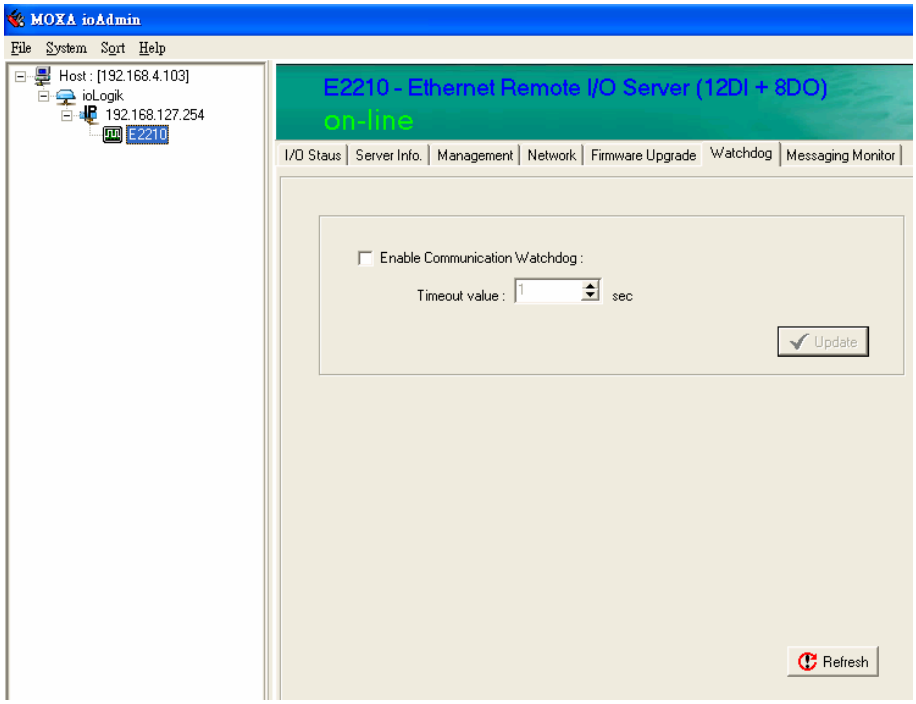
Firmware Update

You can use ioAdmin to remotely download firmware for E2210. However, you must input the password before you use the firmware upgrade function.

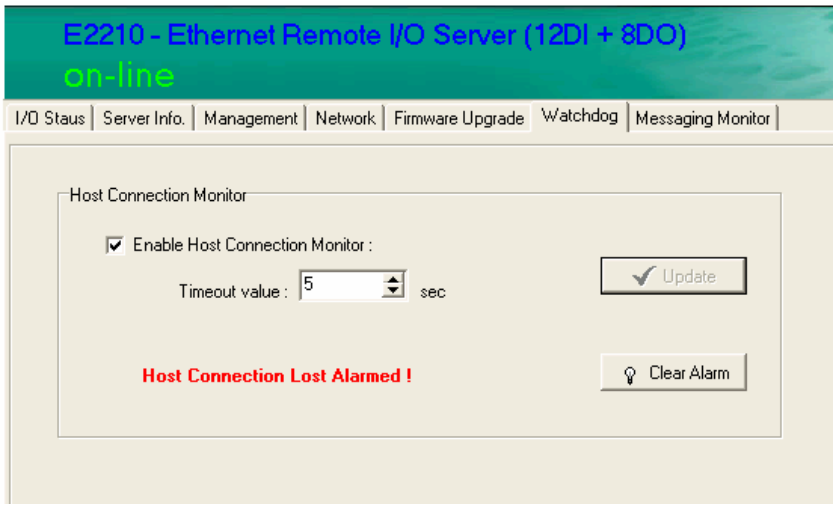


Watchdog Timer

If you want to activate the watch dog timer, you must input the password using the Management function. Once you enter the correct password, the "Watch dog" function is enabled in your tab list. Then you can not only enable the watch dog timer, but also define the value of timeout.



When the watchdog is enabled, you can view a notification on the watchdog page.


E2210 - Ethernet Remote I/O Server (12DI + 8DO)
on-line
I/O Staus | Server Info. | Management | Network | Firmware Upgrade | Watchdog | Messaging Monitor
Host Connection Monitor
Enable Host Connection Monitor :
Timeout value : 5 sec
Update
Host Connection Lost Alarmed !
Clear Alarm

5

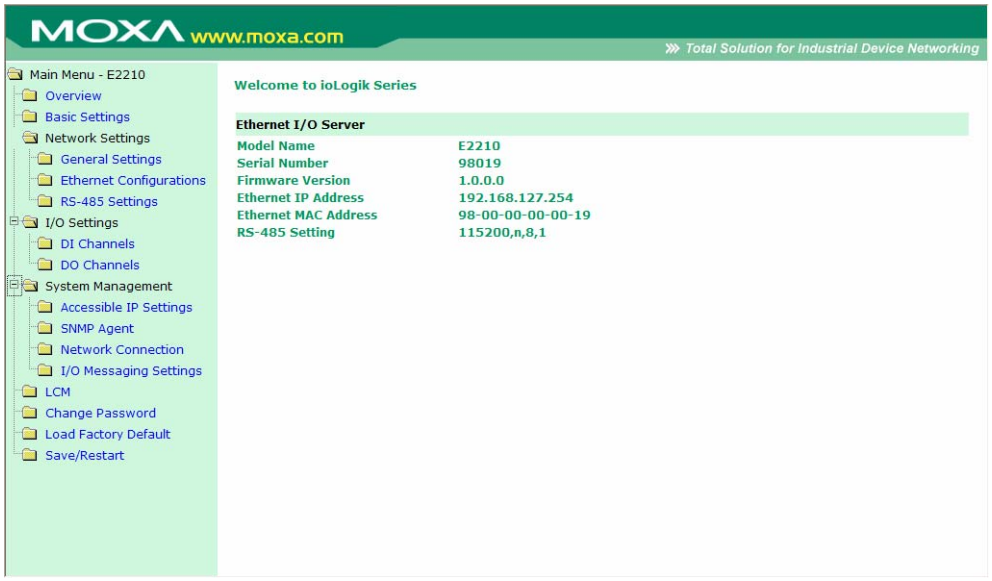
Web Console Configuration

The Web console allows you to configure, and check the configuration using a Web browser, such as Microsoft Internet Explorer.

The following topics are covered in this chapter:

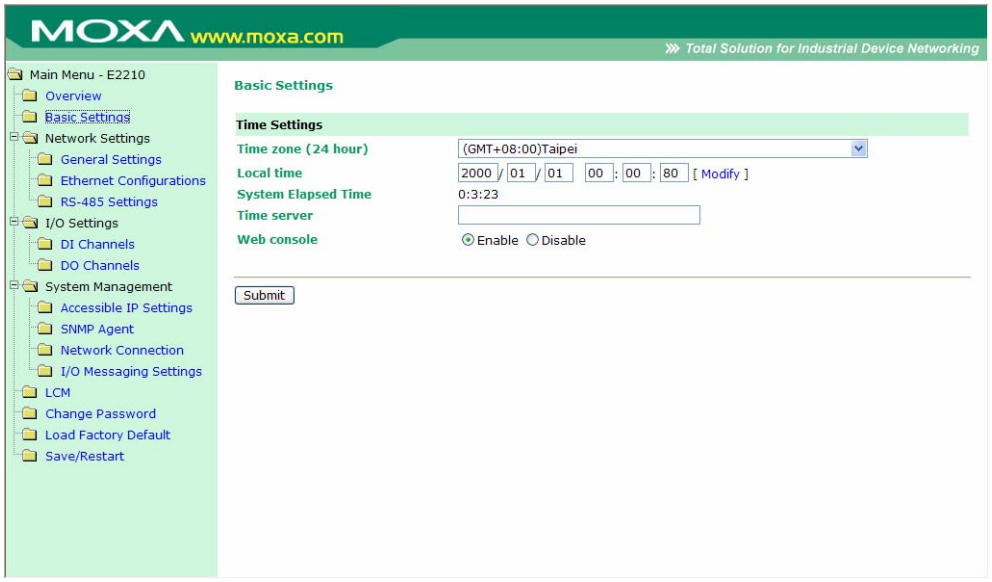
- **Overview for ioLogik E2210**
- **Basic Settings**
- **General Settings**
- **Ethernet Configuration**
- **RS-485 Settings**
- **DI Channel Settings**
- **DO Channel Settings**
- **Accessible IP Settings**
- **SNMP Agent**
- **Network Connection**
- **Active I/O Messaging**
- **LCM Module Information**
- **Change Password**
- **Load Factory Default**
- **Save/Restart**

Overview for ioLogik E2210



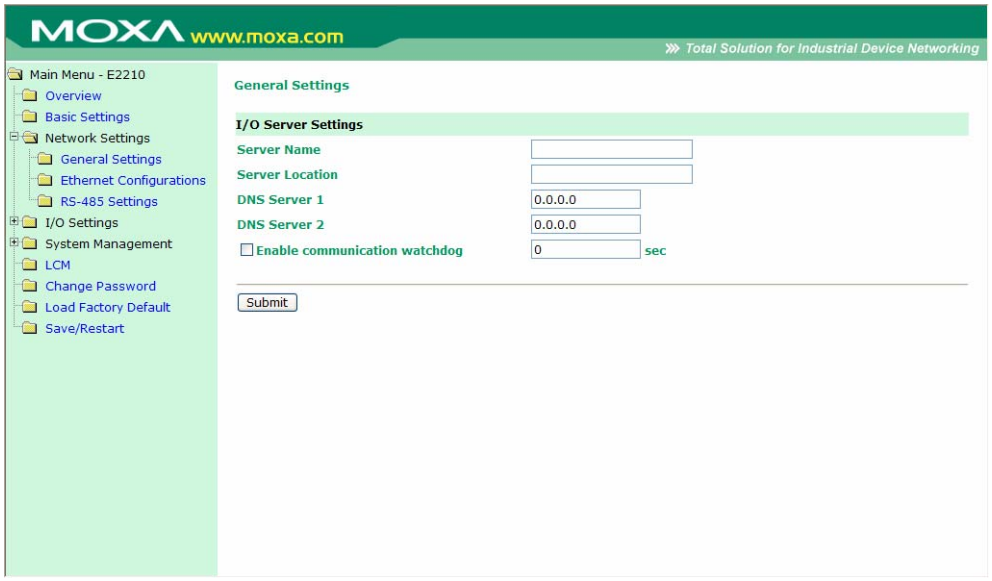
Basic Settings

Using the time setting function, you can define the system time of ioLogik E2210. In addition, you can define the Time server in ioLogik E2210 with which you can synchronize the time.



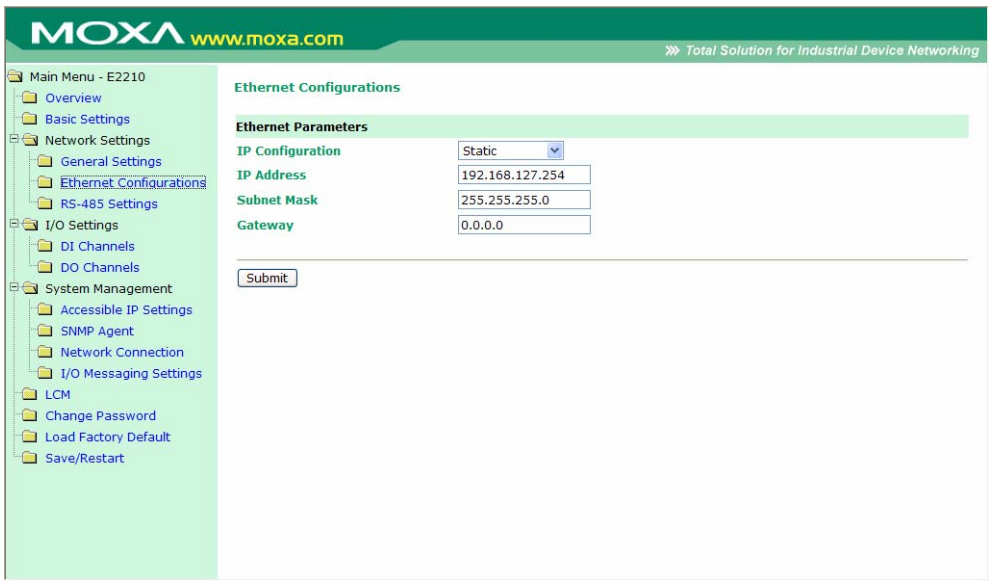
General Settings

To easily manage the I/O Server, you can define the server name and location to help you identify the different I/O servers. You can also enable the watchdog in this page and define the timeout value.



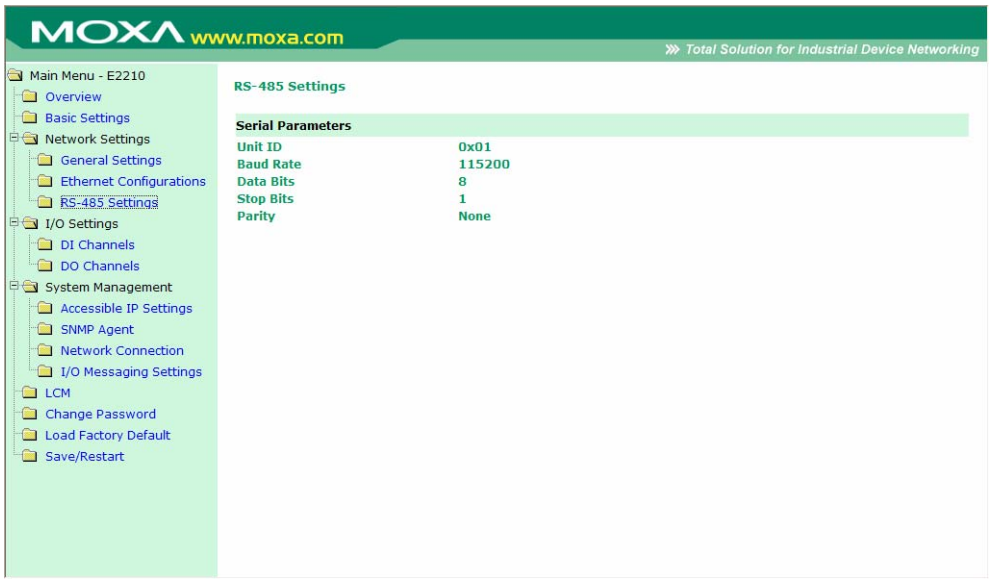
Ethernet Configuration

The ioLogik E2210 provides various ways to set the IP address (Static、DHCP、DHCP/BOOTP、BOOTP). You also can define the submask and gateway in this page.

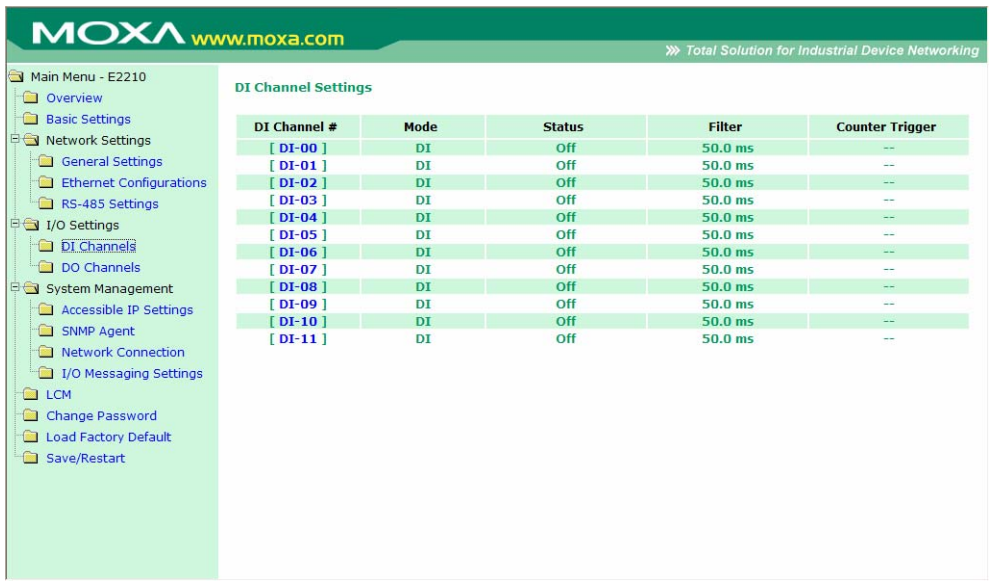


RS-485 Settings

The setting depends on the configuration of the rotate switch on the ioLogik E2210. Rotate the switch to change the settings.

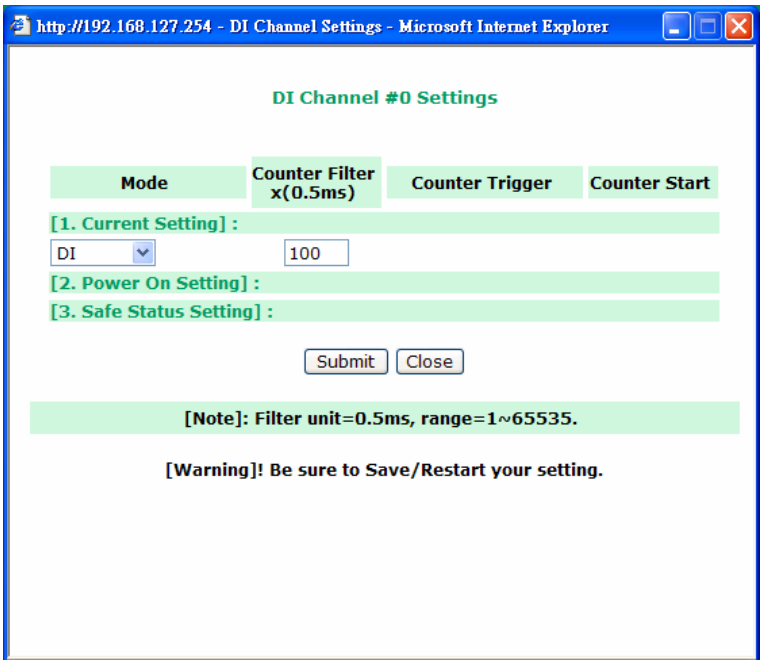


DI Channel Settings

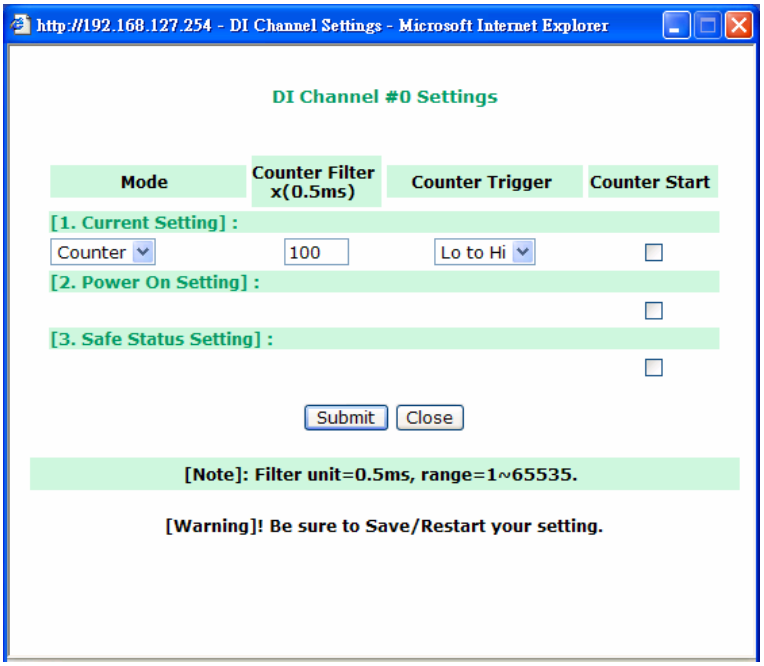

MOXA www.moxa.com
Total Solution for Industrial Device Networking
Main Menu - E2210
Overview
Basic Settings
Network Settings
General Settings
Ethernet Configurations
RS-485 Settings
I/O Settings
DI Channels
DO Channels
System Management
Accessible IP Settings
SNMP Agent
Network Connection
I/O Messaging Settings
LCM
Change Password
Load Factory Default
Save/Restart
DI Channel Settings
DI Channel # Mode Status Filter Counter Trigger
[DI-00] DI Off 50.0 ms --
[DI-01] DI Off 50.0 ms --
[DI-02] DI Off 50.0 ms --
[DI-03] DI Off 50.0 ms --
[DI-04] DI Off 50.0 ms --
[DI-05] DI Off 50.0 ms --
[DI-06] DI Off 50.0 ms --
[DI-07] DI Off 50.0 ms --
[DI-08] DI Off 50.0 ms --
[DI-09] DI Off 50.0 ms --
[DI-10] DI Off 50.0 ms --
[DI-11] DI Off 50.0 ms --

Configuring the digital input settings. You can change the digital input channel as ***DI***, or ***Event Counter***.

For DI mode, the maximum value of the filter is 65535.

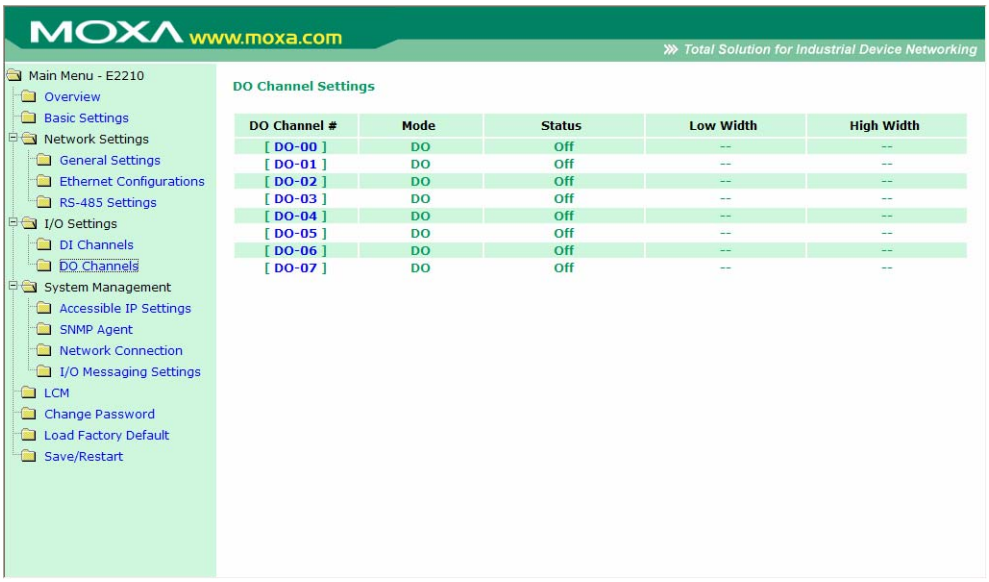


For ***Event Counter***, you can configure the low width and high width in 0.5 ms increments. The counter should be set to either ***start***, or ***stop***. If it is in ***stop*** mode, the counter can be activated by the Modbus command.

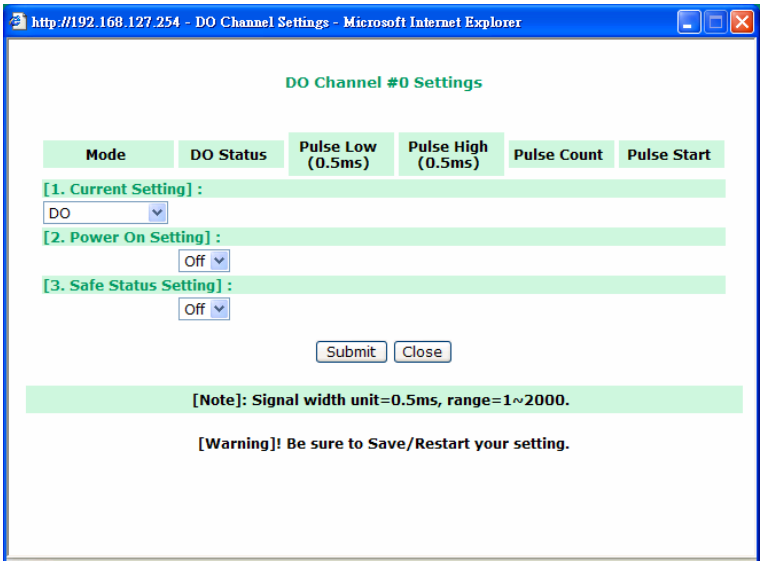


DO Channel Settings

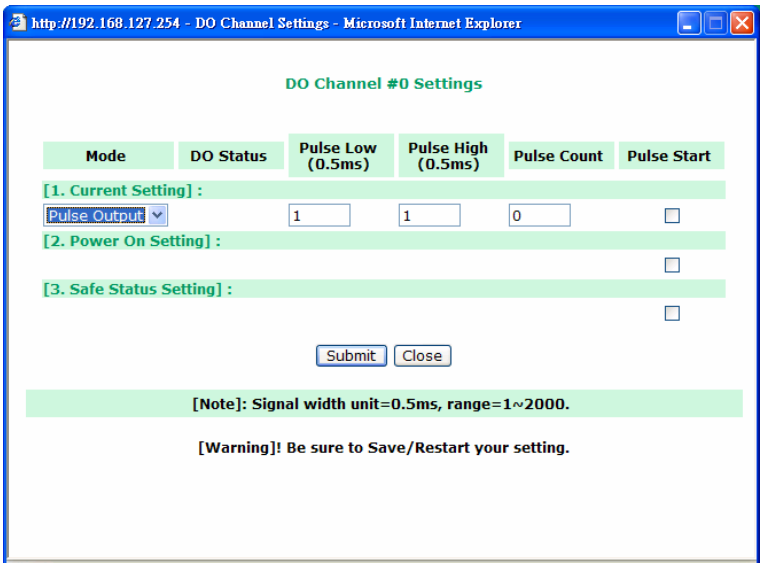
Digital output can be set as ***DO***, or ***Pulse Output***.



You can set the Power ON status, and the Safe Status of the DO. The Safe status is activated by the Communication watchdog Timer. (Note: After changing the DO channel settings, do not forget to Save/Restart your system.)


http://192.168.127.254 - DO Channel Settings - Microsoft Internet Explorer
DO Channel #0 Settings
Mode DO Status Pulse Low (0.5ms) Pulse High (0.5ms) Pulse Count Pulse Start
[1. Current Setting] :
DO
[2. Power On Setting] :
Off
[3. Safe Status Setting] :
Off
Submit Close
[Note]: Signal width unit=0.5ms, range=1~2000.
[Warning]! Be sure to Save/Restart your setting.

Using the DO function, you can define the pulse width for Low and High pluses. The pulse count indicates the number of pulses that are transmitted. (Note: After changing the DO channel settings, do not forget to Save/Restart your system.)



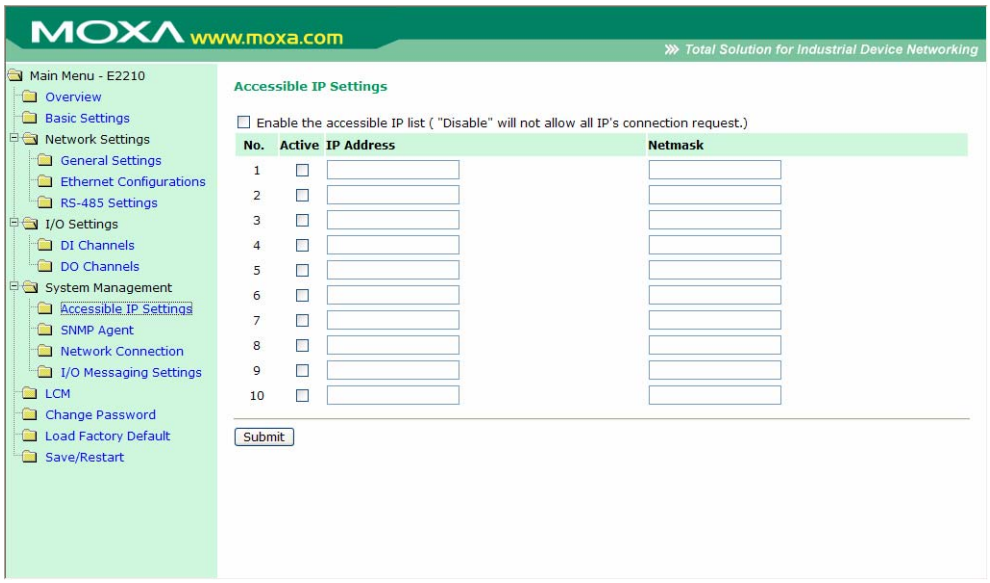
Accessible IP Settings

Accessible IP Settings allows you to add or block remote host IP addresses to prevent unauthorized access. Access to ioLogik E2210 is controlled by IP address. That is, if a host's IP address is in the accessible IP table, then the host will be allowed to access the ioLogik E2210. You can use one of the following types of access.

- **Only one host with a specified IP address can access the ioLogik E2210**
  Use Netmask = 255.255.255.255 for one of the Accessible IP Settings rules.
- **Hosts on a specific subnet can access the ioLogik E2210**
  Use a non-trivial Netmask, such as 255.255.255.0, for one of the Accessible IP Settings rules.
- **Any host can access the NPort 5200**
  Disable this function by deselecting the ***Enable the accessible IP list***.

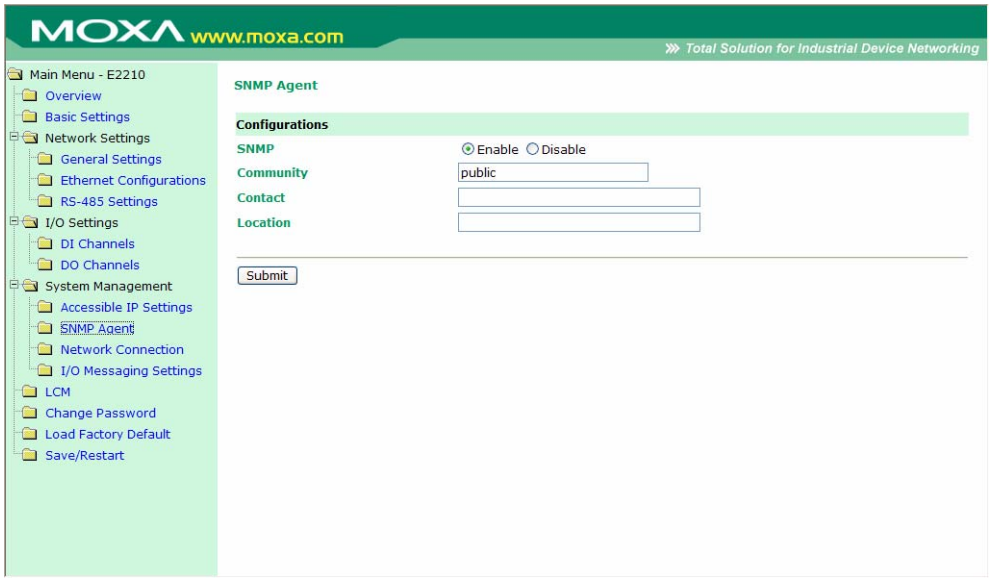
The following table shows six specific Accessible IP Settings rules .Under the "Input format" column, the value "192.168.1.123 / 255.255.255.255" indicates that you should enter 192.168.1.123 for IP Address and 255.255.255.255 for Netmask.

Allowable Hosts	Input format
Any host	Disable
192.168.1.120	192.168.1.120/255.255.255.255
192.168.1.1 to 192.168.1.254	192.168.1.0/255.255.255.0
192.168.0.1 to 192.168.255.254	192.168.0.0/255.255.0.0
192.168.1.1 to 192.168.1.126	192.168.1.0/255.255.255.128
192.168.1.129 to 192.168.1.254	192.168.1.1/255.255.255.128



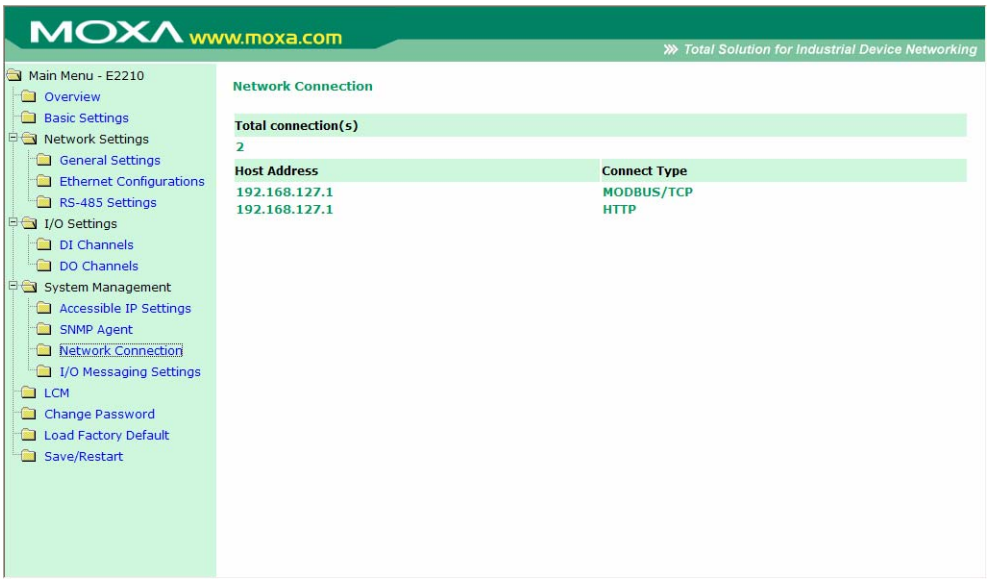
SNMP Agent

For more details refer to chapter 4.

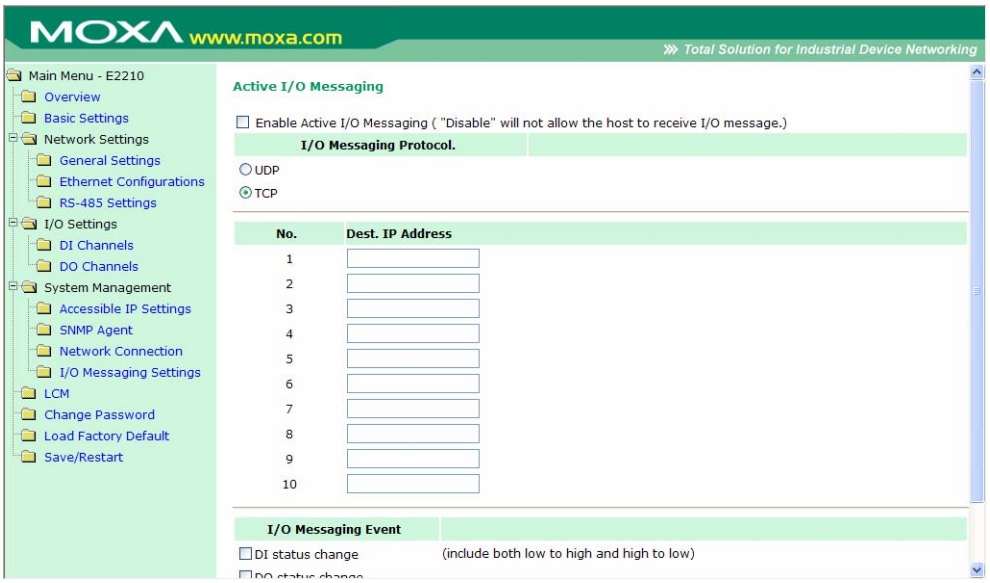


Network Connection

You can see the TCP connections from different Hosts. It may help you to manage the devices more easily.

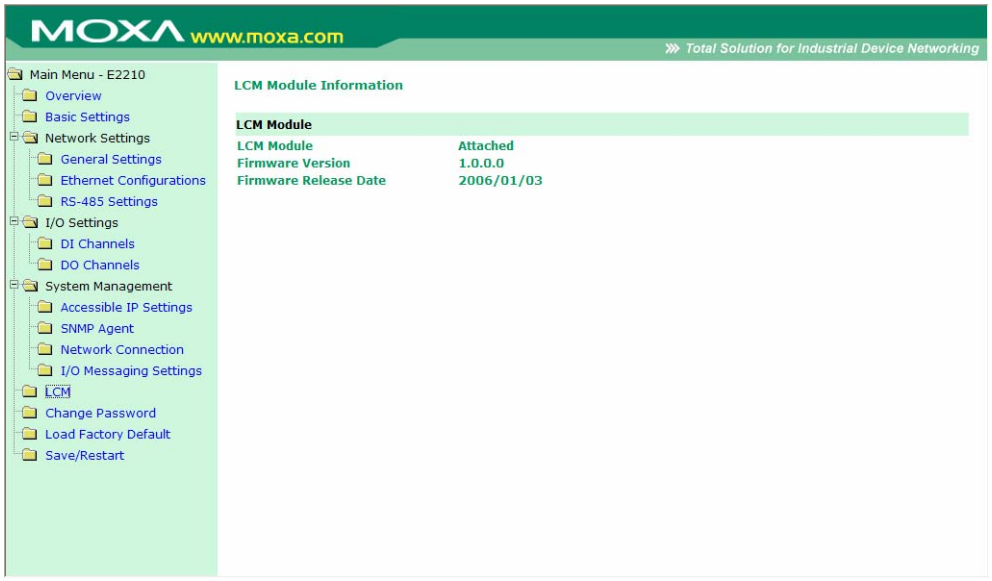


Active I/O Messaging

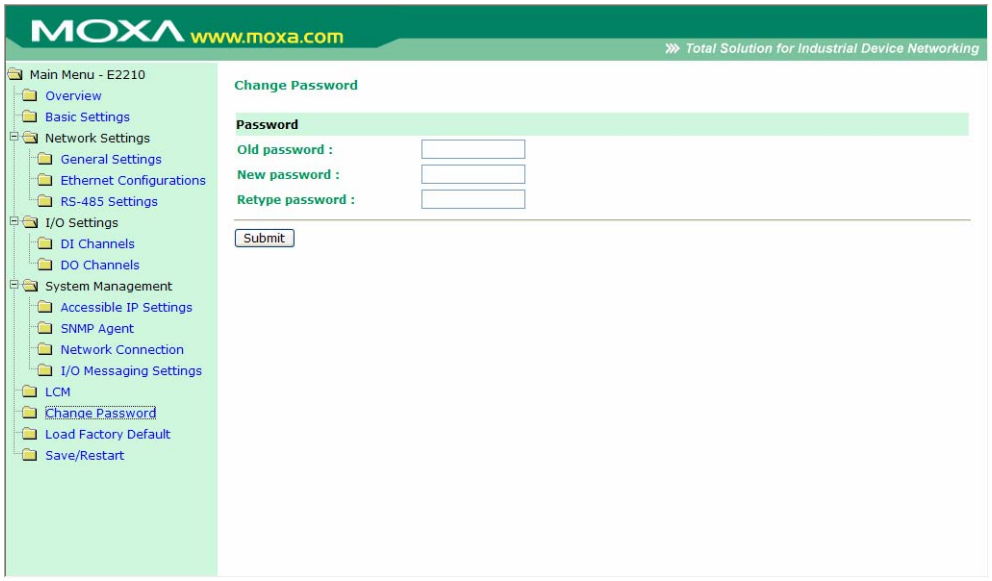


LCM Module Information

Using the LCM Module function, you can check the status of the module. If the module is installed successfully, the system displays "Attached". In addition, the firmware details are also displayed.

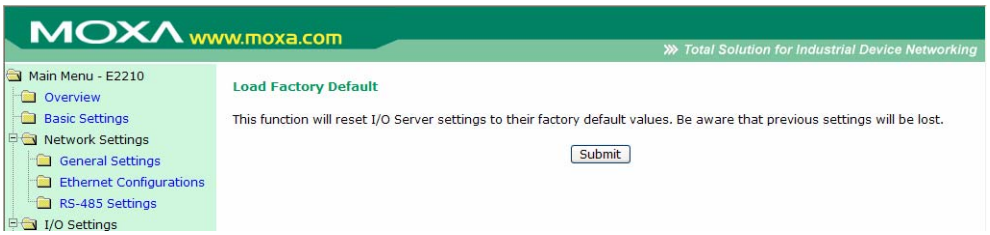


Change Password



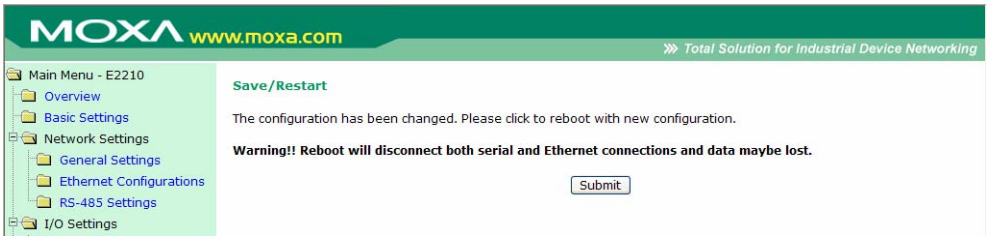
Load Factory Default

Please refer to the previous chapter for Factory Default Settings.



Save/Restart

If you change the configuration, do not forget to reboot the system.



A

Modbus/TCP Address Mappings

E2210 Modbus Mapping

0xxxx Read/Write Coils (Support Functions 1, 5, 15)

Reference	Address	Data Type	Description
00001	0x0000	1 bit	CH0 DO Value 0: Off 1: On
00002	0x0001	1 bit	CH1 DO Value 0: Off 1: On
00003	0x0002	1 bit	CH2 DO Value 0: Off 1: On
00004	0x0003	1 bit	CH3 DO Value 0: Off 1: On
00005	0x0004	1 bit	CH4 DO Value 0: Off 1: On
00006	0x0005	1 bit	CH5 DO Value 0: Off 1: On
00007	0x0006	1 bit	CH6 DO Value 0: Off 1: On
00008	0x0007	1 bit	CH7 DO Value 0: Off 1: On
00009	0x0008	1 bit	CH0 DO Power-On Value 0: Off 1: On
00010	0x0009	1 bit	CH1 DO Power-On Value 0: Off 1: On
00011	0x000A	1 bit	CH2 DO Power-On Value 0: Off 1: On
00012	0x000B	1 bit	CH3 DO Power-On Value 0: Off 1: On
00013	0x000C	1 bit	CH4 DO Power-On Value 0: Off 1: On
00014	0x000D	1 bit	CH5 DO Power-On Value 0: Off 1: On
00015	0x000E	1 bit	CH6 DO Power-On Value 0: Off 1: On
00016	0x000F	1 bit	CH7 DO Power-On Value 0: Off 1: On
00017	0x0010	1 bit	CH0 DO Safe Value 0: Off 1: On
00018	0x0011	1 bit	CH1 DO Safe Value 0: Off 1: On
00019	0x0012	1 bit	CH2 DO Safe Value 0: Off 1: On
00020	0x0013	1 bit	CH3 DO Safe Value 0: Off 1: On
00021	0x0014	1 bit	CH4 DO Safe Value 0: Off 1: On
00022	0x0015	1 bit	CH5 DO Safe Value 0: Off 1: On
00023	0x0016	1 bit	CH6 DO Safe Value 0: Off 1: On
00024	0x0017	1 bit	CH7 DO Safe Value 0: Off 1: On
00025	0x0018	1 bit	CH0 DO Pulse Operate Status 0: Off 1: On
00026	0x0019	1 bit	CH1 DO Pulse Operate Status 0: Off 1: On
00027	0x001A	1 bit	CH2 DO Pulse Operate Status 0: Off 1: On
00028	0x001B	1 bit	CH3 DO Pulse Operate Status 0: Off 1: On
00029	0x001C	1 bit	CH4 DO Pulse Operate Status 0: Off 1: On
00030	0x001D	1 bit	CH5 DO Pulse Operate Status 0: Off 1: On
00031	0x001E	1 bit	CH6 DO Pulse Operate Status 0: Off 1: On
00032	0x001F	1 bit	CH7 DO Pulse Operate Status 0: Off 1: On
00033	0x0020	1 bit	CH0 DO Power-On Pulse Operate Status 0: Off 1: On
00034	0x0021	1 bit	CH1 DO Power-On Pulse Operate Status 0: Off 1: On

Reference	Address	Data Type	Description
00035	0x0022	1 bit	CH2 DO Power-On Pulse Operate Status 0: Off 1: On
00036	0x0023	1 bit	CH3 DO Power-On Pulse Operate Status 0: Off 1: On
00037	0x0024	1 bit	CH4 DO Power-On Pulse Operate Status 0: Off 1: On
00038	0x0025	1 bit	CH5 DO Power-On Pulse Operate Status 0: Off 1: On
00039	0x0026	1 bit	CH6 DO Power-On Pulse Operate Status 0: Off 1: On
00040	0x0027	1 bit	CH7 DO Power-On Pulse Operate Status 0: Off 1: On
00041	0x0028	1 bit	CH0 DO Safe Pulse Operate Status 0: Off 1: On
00042	0x0029	1 bit	CH1 DO Safe Pulse Operate Status 0: Off 1: On
00043	0x002A	1 bit	CH2 DO Safe Pulse Operate Status 0: Off 1: On
00044	0x002B	1 bit	CH3 DO Safe Pulse Operate Status 0: Off 1: On
00045	0x002C	1 bit	CH4 DO Safe Pulse Operate Status 0: Off 1: On
00046	0x002D	1 bit	CH5 DO Safe Pulse Operate Status 0: Off 1: On
00047	0x002E	1 bit	CH6 DO Safe Pulse Operate Status 0: Off 1: On
00048	0x002F	1 bit	CH7 DO Safe Pulse Operate Status 0: Off 1: On
00049	0x0030	1 bit	CH0 DI Counter Status 0: Off 1: On
00040	0x0031	1 bit	CH1 DI Counter Status 0: Off 1: On
00041	0x0032	1 bit	CH2 DI Counter Status 0: Off 1: On
00042	0x0033	1 bit	CH3 DI Counter Status 0: Off 1: On
00043	0x0034	1 bit	CH4 DI Counter Status 0: Off 1: On
00044	0x0035	1 bit	CH5 DI Counter Status 0: Off 1: On
00045	0x0036	1 bit	CH6 DI Counter Status 0: Off 1: On
00056	0x0037	1 bit	CH7 DI Counter Status 0: Off 1: On
00057	0x0038	1 bit	CH8 DI Counter Status 0: Off 1: On
00058	0x0039	1 bit	CH9 DI Counter Status 0: Off 1: On
00059	0x003A	1 bit	CH10 DI Counter Status 0: Off 1: On
00060	0x003B	1 bit	CH11 DI Counter Status 0: Off 1: On
00061	0x003C	1 bit	CH0 DI Clear Counter Value read always: 0 Write: 1: Clear counter value 0: return Illegal Data Value
00062	0x003D	1 bit	CH1 DI Clear Counter Value read always: 0 Write: 1: Clear counter value 0: return Illegal Data Value
00063	0x003E	1 bit	CH2 DI Clear Counter Value read always: 0 Write: 1: Clear counter value 0: return Illegal Data Value
00064	0x003F	1 bit	CH3 DI Clear Counter Value read always: 0 Write: 1: Clear counter value 0: return Illegal Data Value
00065	0x0040	1 bit	CH4 DI Clear Counter Value read always: 0 Write: 1: Clear counter value 0: return Illegal Data Value
00066	0x0041	1 bit	CH5 DI Clear Counter Value read always: 0 Write: 1: Clear counter value 0: return Illegal Data Value
00067	0x0042	1 bit	CH6 DI Clear Counter Value read always: 0 Write: 1: Clear counter value 0: return Illegal Data Value
00068	0x0043	1 bit	CH7 DI Clear Counter Value read always: 0 Write: 1: Clear counter value 0: return Illegal Data Value

Reference	Address	Data Type	Description
00069	0x0044	1 bit	CH8 DI Clear Counter Value read always: 0 Write: 1: Clear counter value 0: return Illegal Data Value
00070	0x0045	1 bit	CH9 DI Clear Counter Value read always: 0 Write: 1: Clear counter value 0: return Illegal Data Value
00071	0x0046	1 bit	CH10 DI Clear Counter Value read always: 0 Write: 1: Clear counter value 0: return Illegal Data Value
00072	0x0047	1 bit	CH11 DI Clear Counter Value read always: 0 Write: 1: Clear counter value 0: return Illegal Data Value
00073	0x0048	1 bit	CH0 DI Counter Overflow Status Read: 0: Normal 1: Overflow Write: 0: clear overflow status 1: return Illegal Data Value
00074	0x0049	1 bit	CH1 DI Counter Overflow Status Read: 0: Normal 1: Overflow Write: 0: clear overflow status 1 : return Illegal Data Value
00075	0x004A	1 bit	CH2 DI Counter Overflow Status Read: 0: Normal 1: Overflow Write: 0: clear overflow status 1: return Illegal Data Value
00076	0x004B	1 bit	CH3 DI Counter Overflow Status Read: 0: Normal 1: Overflow Write: 0 : clear overflow status 1: return Illegal Data Value
00077	0x004C	1 bit	CH4 DI Counter I Overflow Status Read: 0: Normal 1: Overflow Write: 0: clear overflow status 1: return Illegal Data Value
00078	0x004D	1 bit	CH5 DI Overflow Status Read: 0: Normal 1: Overflow Write: 0: clear overflow status 1: return Illegal Data Value
00079	0x004E	1 bit	CH6 DI Counter Overflow Status Read: 0: Normal 1: Overflow Write: 0: clear overflow status 1: return Illegal Data Value
00080	0x004F	1 bit	CH7 DI Counter Overflow Status Read: 0: Normal 1: Overflow Write: 0: clear overflow status 1: return Illegal Data Value

Reference	Address	Data Type	Description
00081	0x0050	1 bit	CH8 DI Counter Overflow Status Read: 0: Normal 1: Overflow Write: 0: clear overflow status 1: return Illegal Data Value
00082	0x0051	1 bit	CH9 DI Counter Overflow Status Read: 0: Normal 1: Overflow Write: 0: clear overflow status 1: return Illegal Data Value
00083	0x0052	1 bit	CH10 DI Counter Overflow Status Read: 0: Normal 1: Overflow Write: 0: clear overflow status 1: return Illegal Data Value
00084	0x0053	1 bit	CH11 DI Counter Overflow Status Read: 0: Normal 1: Overflow Write: 0: clear overflow status 1: return Illegal Data Value
00085	0x0054	1 bit	CH0 DI Counter Trigger : 0=Low to High, 1=High to Low
00086	0x0055	1 bit	CH1 DI Counter Trigger : 0=Low to High, 1=High to Low
00087	0x0056	1 bit	CH2 DI Counter Trigger : 0=Low to High, 1=High to Low
00088	0x0057	1 bit	CH3 DI Counter Trigger : 0=Low to High, 1=High to Low
00089	0x0058	1 bit	CH4 DI Counter Trigger : 0=Low to High, 1=High to Low
00090	0x0059	1 bit	CH5 DI Counter Trigger : 0=Low to High, 1=High to Low
00091	0x005A	1 bit	CH6 DI Counter Trigger : 0=Low to High, 1=High to Low
00092	0x005B	1 bit	CH7 DI Counter Trigger : 0=Low to High, 1=High to Low
00093	0x005C	1 bit	CH8 DI Counter Trigger : 0=Low to High, 1=High to Low
00094	0x005D	1 bit	CH9 DI Counter Trigger : 0=Low to High, 1=High to Low
00095	0x005E	1 bit	CH10 DI Counter Trigger : 0=Low to High, 1=High to Low
00096	0x005F	1 bit	CH11 DI Counter Trigger : 0=Low to High, 1=High to Low
00097	0x0060	1 bit	CH0 DI Counter Power-On Status 0: Off 1: On
00098	0x0061	1 bit	CH1 DI Counter Power-On Status 0: Off 1: On
00099	0x0062	1 bit	CH2 DI Counter Power-On Status 0: Off 1: On
00100	0x0063	1 bit	CH3 DI Counter Power-On Status 0: Off 1: On
00101	0x0064	1 bit	CH4 DI Counter Power-On Status 0: Off 1: On
00102	0x0065	1 bit	CH5 DI Counter Power-On Status 0: Off 1: On
00103	0x0066	1 bit	CH6 DI Counter Power-On Status 0: Off 1: On
00104	0x0067	1 bit	CH7 DI Counter Power-On Status 0: Off 1: On
00105	0x0068	1 bit	CH8 DI Counter Power-On Status 0: Off 1: On
00106	0x0069	1 bit	CH9 DI Counter Power-On Status 0: Off 1: On
00107	0x006A	1 bit	CH10 DI Counter Power-On Status 0: Off 1: On
00108	0x006B	1 bit	CH11 DI Counter Power-On Status 0: Off 1: On
00109	0x006C	1 bit	CH0 DI Counter Safe Status 0: Off 1: On
00110	0x006D	1 bit	CH1 DI Counter Safe Status 0: Off 1: On
00111	0x006E	1 bit	CH2 DI Counter Safe Status 0: Off 1: On
00112	0x006F	1 bit	CH3 DI Counter Safe Status 0: Off 1: On
00113	0x0070	1 bit	CH4 DI Counter Safe Status 0: Off 1: On
00114	0x0071	1 bit	CH5 DI Counter Safe Status 0: Off 1: On
00115	0x0072	1 bit	CH6 DI Counter Safe Status 0: Off 1: On

Reference	Address	Data Type	Description
00116	0x0073	1 bit	CH7 DI Counter Safe Status 0: Off 1: On
00117	0x0074	1 bit	CH8 DI Counter Safe Status 0: Off 1: On
00118	0x0075	1 bit	CH9 DI Counter Safe Status 0: Off 1: On
00119	0x0076	1 bit	CH10 DI Counter Safe Status 0: Off 1: On
00120	0x0077	1 bit	CH11 DI Counter Safe Status 0: Off 1: On

1xxxx Read Only Coils (Support Function 2)

Reference	Address	Data Type	Description
10001	0x0000	1 bit	CH0 DI Value
10002	0x0001	1 bit	CH1 DI Value
10003	0x0002	1 bit	CH2 DI Value
10004	0x0003	1 bit	CH3 DI Value
10005	0x0004	1 bit	CH4 DI Value
10006	0x0005	1 bit	CH5 DI Value
10007	0x0006	1 bit	CH6 DI Value
10008	0x0007	1 bit	CH7 DI Value
10009	0x0008	1 bit	CH8 DI Value
10010	0x0009	1 bit	CH9 DI Value
10011	0x000A	1 bit	CH10 DI Value
10012	0x000B	1 bit	CH11 DI Value

3xxxx Read Only Registers (Support Function 4)

Reference	Address	Data Type	Description
30001	0x0000	word	CH0 DI Counter Value Hi-Word
30002	0x0001	word	CH0 DI Counter Value Lo-Word
30003	0x0002	word	CH1 DI Counter Value Hi-Word
30004	0x0003	word	CH1 DI Counter Value Lo-Word
30005	0x0004	word	CH2 DI Counter Value Hi-Word
30006	0x0005	word	CH2 DI Counter Value Lo-Word
30007	0x0006	word	CH3 DI Counter Value Hi-Word
30008	0x0007	word	CH3 DI Counter Value Lo-Word
30009	0x0008	word	CH4 DI Counter Value Hi-Word
30010	0x0009	word	CH4 DI Counter Value Lo-Word
30011	0x000A	word	CH5 DI Counter Value Hi-Word
30012	0x000B	word	CH5 DI Counter Value Lo-Word
30013	0x000C	word	CH6 DI Counter Value Hi-Word
30014	0x000D	word	CH6 DI Counter Value Lo-Word
30015	0x000E	word	CH7 DI Counter Value Hi-Word
30016	0x000F	word	CH7 DI Counter Value Lo-Word
30017	0x0010	word	CH8 DI Counter Value Hi-Word
30018	0x0011	word	CH8 DI Counter Value Lo-Word
30019	0x0012	word	CH9 DI Counter Value Hi-Word
30020	0x0013	word	CH9 DI Counter Value Lo-Word
30021	0x0014	word	CH10 DI Counter Value Hi-Word
30022	0x0015	word	CH10 DI Counter Value Lo-Word
30023	0x0016	word	CH11 DI Counter Value Hi-Word
30024	0x0017	word	CH11 DI Counter Value Lo-Word

4xxxx Read/Write Registers (Support Functions 3, 6, 16)

Reference	Address	Data Type	Description
40001	0x0000	word	CH0 DO Pulse Output Count Value Hi-Word
40002	0x0001	word	CH0 DO Pulse Output Count Value Lo-Word
40003	0x0002	word	CH1 DO Pulse Output Count Value Hi-Word
40004	0x0003	word	CH1 DO Pulse Output Count Value Lo-Word
40005	0x0004	word	CH2 DO Pulse Output Count Value Hi-Word
40006	0x0005	word	CH2 DO Pulse Output Count Value Lo-Word
40007	0x0006	word	CH3 DO Pulse Output Count Value Hi-Word
40008	0x0007	word	CH3 DO Pulse Output Count Value Lo-Word
40009	0x0008	word	CH4 DO Pulse Output Count Value Hi-Word
40010	0x0009	word	CH4 DO Pulse Output Count Value Lo-Word
40011	0x000A	word	CH5 DO Pulse Output Count Value Hi-Word
40012	0x000B	word	CH5 DO Pulse Output Count Value Lo-Word
40013	0x000C	word	CH6 DO Pulse Output Count Value Hi-Word
40014	0x000D	word	CH6 DO Pulse Output Count Value Lo-Word
40015	0x000E	word	CH7 DO Pulse Output Count Value Hi-Word
40016	0x000F	word	CH7 DO Pulse Output Count Value Lo-Word
40017	0x0010	word	CH0 DO Pulse Low Signal Width
40018	0x0011	word	CH1 DO Pulse Low Signal Width
40019	0x0012	word	CH2 DO Pulse Low Signal Width
40020	0x0013	word	CH3 DO Pulse Low Signal Width
40021	0x0014	word	CH4 DO Pulse Low Signal Width
40022	0x0015	word	CH5 DO Pulse Low Signal Width
40023	0x0016	word	CH6 DO Pulse Low Signal Width
40024	0x0017	word	CH7 DO Pulse Low Signal Width
40025	0x0018	word	CH0 DO Pulse High Signal Width
40026	0x0019	word	CH1 DO Pulse High Signal Width
40027	0x001A	word	CH2 DO Pulse High Signal Width
40028	0x001B	word	CH3 DO Pulse High Signal Width
40029	0x001C	word	CH4 DO Pulse High Signal Width
40030	0x001D	word	CH5 DO Pulse High Signal Width
40031	0x001E	word	CH6 DO Pulse High Signal Width
40032	0x001F	word	CH7 DO Pulse High Signal Width
40033	0x0020	word	CH0 DO Mode 0: DO 1: Pulse
40034	0x0021	word	CH1 DO Mode 0: DO 1: Pulse
40035	0x0022	word	CH2 DO Mode 0: DO 1: Pulse
40036	0x0023	word	CH3 DO Mode 0: DO 1: Pulse
40037	0x0024	word	CH4 DO Mode 0: DO 1: Pulse
40038	0x0025	word	CH5 DO Mode 0: DO 1: Pulse
40039	0x0026	word	CH6 DO Mode 0: DO 1: Pulse
40040	0x0027	word	CH7 DO Mode 0: DO 1: Pulse

Reference	Address	Data Type	Description
40041	0x0028	word	CH0 DI / Counter Filter
40042	0x0029	word	CH1 DI / Counter Filter
40043	0x002A	word	CH2 DI / Counter Filter
40044	0x002B	word	CH3 DI / Counter Filter
40045	0x002C	word	CH4 DI / Counter Filter
40046	0x002D	word	CH5 DI / Counter Filter
40047	0x002E	word	CH6 DI / Counter Filter
40048	0x002F	word	CH7 DI / Counter Filter
40049	0x0030	word	CH8 DI / Counter Filter
40050	0x0031	word	CH9 DI / Counter Filter
40051	0x0032	word	CH10 DI / Counter Filter
40052	0x0033	word	CH11 DI / Counter Filter
40053	0x0034	word	CH0 DI Mode 0: DI 1: Counter Others: return Illegal Data Value
40054	0x0035	word	CH1 DI Mode 0: DI 1: Counter Others: return Illegal Data Value
40055	0x0036	word	CH2 DI Mode 0: DI 1: Counter Others: return Illegal Data Value
40056	0x0037	word	CH3 DI Mode 0: DI 1: Counter Others: return Illegal Data Value
40057	0x0038	word	CH4 DI Mode 0: DI 1: Counter Others: return Illegal Data Value
40058	0x0039	word	CH5 DI Mode 0: DI 1: Counter Others: return Illegal Data Value
40059	0x003A	word	CH6 DI Mode 0: DI 1: Counter Others: return Illegal Data Value
40060	0x003B	word	CH7 DI Mode 0: DI 1: Counter Others: return Illegal Data Value
40061	0x003C	word	CH8 DI Mode 0: DI 1: Counter Others: return Illegal Data Value
40062	0x003D	word	CH9 DI Mode 0: DI 1: Counter Others: return Illegal Data Value
40063	0x003E	word	CH10 DI Mode 0: DI 1: Counter Others: return Illegal Data Value
40064	0x003F	word	CH11 DI Mode 0: DI 1: Counter Others: return Illegal Data Value

Function 8

Sub-function	Data Field (Request)	Data Field (Response)	Description
0x0001	0x0000	Echo Request Data	Reboot
0x0001	0xFF00	Echo Request Data	Reset to Factory defaults

B

Used Network Port Numbers

E2210/E2240 Network Port Usage

Port	Type	Usage
80	TCP	Web Server
502	TCP	Modbus Communication
161	TCP	SNMP
68	UDP	BOOTPC
68	UDP	DHCP
4800	UDP	Auto search

C

SNMP Agents with MIB II & RS-232 like groups

RFC1213 MIB II Supported SNMP Variables

Moxa provides you a SNMP to I/O solution that can help you monitor the I/O status via SNMP software. You can find the MIB file on the CDROM.

System MIB	Interfaces MIB	IP MIB	ICMP MIB
SysDescr	ifNumber	ipForwarding	IcmpInMsgs
SysObjectID	ifIndex	ipDefaultTTL	IcmpInErrors
SysUpTime	ifDescr	ipInreceives	IcmpInDestUnreachs
SysContact	ifType	ipInHdrErrors	IcmpInTimeExcds
SysName	ifMtu	ipInAddrErrors	IcmpInParmProbs
SysLocation	ifSpeed	ipForwDatagrams	IcmpInSrcQuenchs
SysServices	ifPhysAddress	ipInUnknownProtos	IcmpInRedirects
	ifAdminStatus	ipInDiscards	IcmpInEchos
	ifOperStatus	ipInDelivers	IcmpInEchoReps
	ifLastChange	ipOutRequests	IcmpInTimestamps
	ifInOctets	ipOutDiscards	IcmpTimestampReps
	ifInUcastPkts	ipOutNoRoutes	IcmpInAddrMasks
	ifInNUcastPkts	ipReasmTimeout	IcmpOutMsgs
	ifInDiscards	ipReasmReqds	IcmpOutErrors
	ifInErrors	ipReasmOKs	IcmpOutDestUnreachs
	ifInUnknownProtos	ipReasmFails	IcmpOutTimeExcds
	ifOutOctets	ipFragOKs	IcmpOutParmProbs
	ifOutUcastPkts	ipFragFails	IcmpOutSrcQuenchs
	ifOutNUcastPkts	ipFragCreates	IcmpOutRedirects
	ifOutDiscards	ipAdEntAddr	IcmpOutEchos
	ifOutErrors	ipAdEntIfIndex	IcmpOutEchoReps

System MIB	Interfaces MIB	IP MIB	ICMP MIB
	ifOutQLen	ipAdEntNetMask	IcmpOutTimestamps
	ifSpecific	ipAdEntBcastAddr	IcmpOutTimestampReps
		ipAdEntReasmMaxSize	IcmpOutAddrMasks
		ipRouteDest	IcmpOutAddrMaskReps
		ipRouteIfIndex	
		ipRouteMetric1	
		ipRouteMetric2	
		ipRouteMetric3	
		ipRouteMetric4	
		ipRouteNextHop	
		ipRouteType	
		ipRouteProto	
		ipRouteAge	
		ipRouteMask	
		ipRouteMetric5	
		ipRouteInfo	
		IpNetToMediaIfIndex	
		IpNetToMediaPhysAddress	
		IpNetToMediaNetAddress	
		IpNetToMediaType	
		IpRoutingDiscards	

UDP MIB	TCP MIB	SNMP MIB
UdpInDatagrams	tcpRtoAlgorithm	snmpInPkts
UdpNoPorts	tcpRtoMin	snmpOutPkts
UdpInErrors	tcpRtoMax	snmpInBadVersions
UdpOutDatagrams	tcpMaxConn	snmpInBadCommunityNames
UdpLocalAddress	tcpActiveOpens	snmpInBadCommunityUses
UdpLocalPort	tcpPassiveOpens	snmpInASNParseErrs
	tcpAttempFails	snmpInTooBigs
	tcpEstabResets	snmpInNoSuchNames
Address Translation MIB	tcpCurrEstab	snmpInBadValues
AtIfIndex	tcpInSegs	snmpInReadOnlys
AtPhysAddress	tcpOutSegs	snmpInGenErrs
AtNetAddress	tcpRetransSegs	snmpInTotalReqVars
AtNetAddress	tcpConnState	snmpInTotalSetVars
	tcpConnLocalAddress	snmpInGetRequests
	tcpConnLocalPort	snmpInGetNexts
	tcpConnRemAddress	snmpInSetRequests
	tcpConnRemPort	snmpInGetResponses
	tcpInErrs	snmpInTraps
	tcpOutRsts	snmpOutTooBigs
		snmpOutNoSuchNames
		snmpOutBadValues
		snmpOutGenErrs
		snmpOutGetRequests
		snmpOutGetNexts
		snmpOutSetRequests
		snmpOutGetResponses
		snmpOutTraps
		snmpEnableAuthenTraps

MOXA IO MIB	MOXA IO MIB	MOXA IO MIB
totalChannelNumber	DI04-Index	DI09-Index
serverModel	DI04-Type	DI09-Type
systemTime	DI04-Mode	DI09-Mode
firmwareVersion	DI04-Status	DI09-Status
DI00-Index	DI04-Filter	DI09-Filter
DI00-Type	DI05-Index	DI10-Index
DI00-Mode	DI05-Type	DI10-Type
DI00-Status	DI05-Mode	DI10-Mode
DI00-Filter	DI05-Status	DI10-Status
DI01-Index	DI05-Filter	DI10-Filter
DI01-Type	DI06-Index	DI11-Index
DI01-Mode	DI06-Type	DI11-Type
DI01-Status	DI06-Mode	DI11-Mode
DI01-Filter	DI06-Status	DI11-Status
DI02-Index	DI06-Filter	DI11-Filter
DI02-Type	DI07-Index	
DI02-Mode	DI07-Type	
DI02-Status	DI07-Mode	
DI02-Filter	DI07-Status	
DI03-Index	DI07-Filter	
DI03-Type	DI08-Index	
DI03-Mode	DI08-Type	
DI03-Status	DI08-Mode	
DI03-Filter	DI08-Status	
	DI08-Filter	

MOXA IO MIB	MOXA IO MIB	MOXA IO MIB
DO00-Index	DO03-Index	DO06-Index
DO00-Type	DO03-Type	DO06-Type
DO00-Mode	DO03-Mode	DO06-Mode
DO00-Status	DO03-Status	DO06-Status
DO01-Index	DO04-Index	DO07-Index
DO01-Type	DO04-Type	DO07-Type
DO01-Mode	DO04-Mode	DO07-Mode
DO01-Status	DO04-Status	DO07-Status
DO02-Index	DO05-Index	
DO02-Type	DO05-Type	
DO02-Mode	DO05-Mode	
DO02-Status	DO05-Status	

D

Factory Default Settings

ioLogik E2210 is configured with the following factory defaults:

Default IP address:	**192.168.127.254**
Default Netmask:	**255.255.255.0**
Default Gateway:	**0.0.0.0**
Communication watchdog:	**Disable**
Modbus TCP alive check Timeout:	**60 secs**
DI Mode:	**DI**
Filter time:	**100 × 0.5 ms**
Trigger for counter:	**Lo to Hi**
Counter status:	**Stop**
DO Mode:	**DO**
DO Safe Status:	**Off**
Power on status:	**Off**
Low width for pulse:	**1 × 0.5 ms**
Hi width for pulse:	**1 × 0.5 ms**
Output pulses:	**0 (continuous)**
Password:	**NONE**
Module Name:	**NONE**
Module Location:	**NONE**
SNMP:	**Enable**
Community:	**Public**
Contact:	**NONE**
Location:	**NONE**

E

Pinouts and Cable Wiring

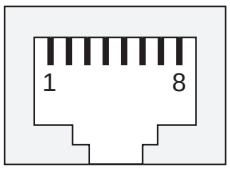
The following topics are covered in this appendix:

- **Port Pinout Diagrams**
  - Ethernet Port Pinouts
  - Serial Port Pinouts
- **Ethernet Cable Wiring Diagrams**

Port Pinout Diagrams

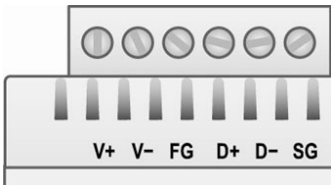
Ethernet Port Pinouts

Pin	Signal
1	Tx+
2	Tx-
3	Rx+
6	Rx-

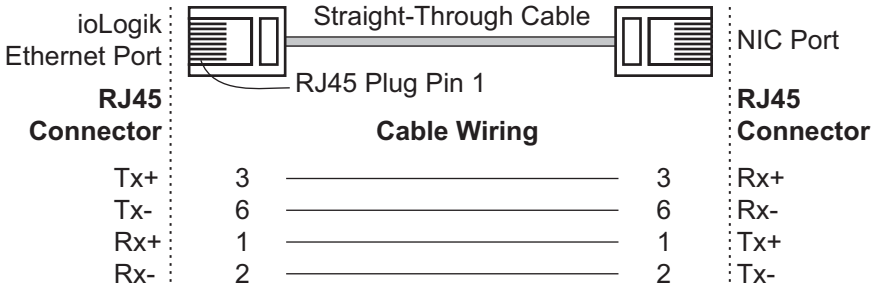


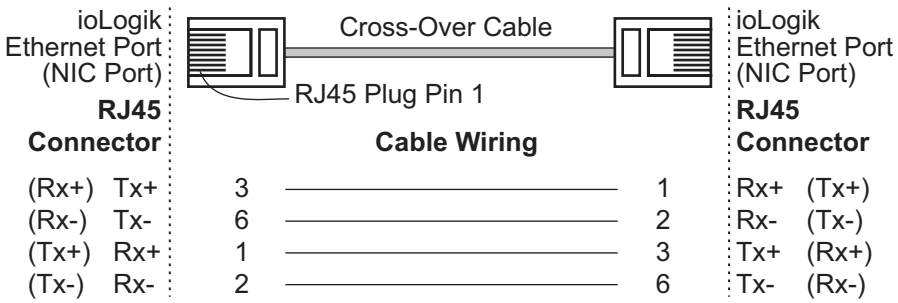
Serial Port Pinouts

E2210 RS-485 Network Adapter Pin Assignment



Ethernet Cable Wiring Diagrams





F

Service Information

This appendix shows you how to contact MOXA for information about this, and other products, and how to report problems.

In this appendix, we cover the following topics.

- **MOXA Internet Services**
- **Problem Report Form**
- **Product Return Procedure**

MOXA Internet Services

Customer satisfaction is our primary concern. To ensure that customers receive the full benefit of our products, MOXA Internet Services has been set up to provide technical support, driver updates, product information, and user's manual updates.

The following services are provided

E-mail for technical support ..... support@moxa.com.tw

World Wide Web (WWW) Site for product information:

..... http://www.moxa.com or

..... http://www.moxa.com.tw

Problem Report Form

MOXA ioLogik E2210

Customer name:	
Company:	
Tel:	**Fax:**
Email:	**Date:**

MOXA Product: ioLogik E2210

Serial Number: _____

Problem Description: Please describe the symptoms of the problem as clearly as possible, including any error messages you see. A clearly written description of the problem will allow us to reproduce the symptoms, and expedite the repair of your product.

Product Return Procedure

For product repair, exchange, or refund, the customer must:

- Provide evidence of original purchase.
- Obtain a Product Return Agreement (PRA) from the sales representative, or dealer.
- Fill out the Problem Report Form (PRF). Include as much detail as possible for a shorter product repair time.
- Carefully pack the product in an anti-static package, and send it, pre-paid, to the dealer. The PRA should be visible on the outside of the package, and include a description of the problem, along with the return address, and telephone number of a technical contact.